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Welcome from the president

I am delighted to welcome the Waterbird Society back to New Jersey as we celebrate our 50th anniversary! New Jersey holds a special place in our Society's history. Although the Society took shape through meetings in DeKalb, IL and Charleston, SC in the 1970s, two of our founders, Joanna Burger and Mike Gochfeld, along with several past presidents, have studied waterbirds here for more than 50 years. Their work has inspired generations of students who have become researchers and leaders in our Society. New Jersey is also where the Society is incorporated, making this homecoming especially meaningful. Let's celebrate five decades of discovery, friendship, and shared passion for waterbirds—and look forward to the next 50 years!

I thank John Brzorad, our President-Elect and Scientific Program Chair, for organizing an exciting program of presentations, symposia, and workshops. We're pleased to welcome the Atlantic Marine Bird Cooperative and recognize Caleb Spiegel for his leadership. Their participation creates even more opportunities to exchange ideas, build connections, and celebrate our shared work. Special thanks to David Mizrahi and Lillian Armstrong, my co-chairs on the Local Organizing Committee, for their tremendous work in making this anniversary meeting possible.

We recognize that travel has been especially challenging for many of our colleagues this year. We miss those who couldn't secure the funding or permission to attend, as well as those who decided not to travel given the uncertainties of the times. We wish you could be here celebrating with us, and we look forward to staying connected.

To everyone here in Cape May, welcome! Whether you are an experienced scientist or a student beginning your career, I encourage you to share ideas, meet new colleagues, reconnect with old friends, and learn from one another. Our Society is an open, inclusive community that thrives on collaboration. Many of the founders and early members of society are here this week: talk to them! Talk to people you haven't met yet. Take advantage of every opportunity—from presentations and discussions to social events, field trips, and even a swim in the Atlantic!

Our Society is truly international, with members and leaders from around the world. Authors and co-authors from 18 countries have contributed to the research we'll hear about during this meeting. Waterbirds recognize no national borders, and neither does our commitment to understanding and conserving them. These international exchanges strengthen both our science and our Society. We also have reason to celebrate our financial health. Our endowments, including the Kushlan and Nisbet funds, support research and conservation, while the Tom Custer Fund helps colleagues from outside North America attend our meetings. And don't forget to support the silent auction! Your bids help finance student travel.

As we celebrate 50 years of the Waterbird Society, we can be proud of what we've accomplished and excited about what lies ahead. The next generation of leaders is ready to take flight, and we're helping give them the lift they need! Thank you for being part of this special gathering. Enjoy your time in Cape May, make new connections, renew old friendships, and leave inspired by the science, the people, and the community that make the Waterbird Society so special.

Nellie Tsipoura
Waterbird Society President

Welcome from the local committee

Welcome to the 50th Annual Waterbird Society Conference. The Local Planning Committee is delighted to host this gathering. To celebrate this historic milestone, the Society is planning several special events that we are sure will be memorable.

We recognize that today's economic and political conditions may have made attending this conference difficult. These challenges are significant: they affect how we fund our work, collaborate across borders, and interact in professional settings, like this conference. Organizing the conference brought its own set of challenges. Despite this, we are confident this will be an exciting and memorable meeting.

Sadly, some of our colleagues and aspiring students, who are the future of the Society, cannot attend and they will be deeply missed, but we are grateful to come together to celebrate waterbirds with you. We know many of you have made real sacrifices to be here and greatly appreciate this. We look forward to reconnecting with colleagues, building new relationships, and exchanging ideas about the birds we value and how we can work together to ensure their future.

We would like to thank all the conference sponsors: Cellular Tracking Technologies, Southern Environmental Law Center, New York City Bird Alliance, New Jersey Department of Environmental Protection/Fish and Wildlife, PathTrack, Birds Caribbean, and Earthjustice. Their support was instrumental to ensuring the conference's success and we are truly grateful for their generosity.

We also want to welcome you to Cape May, one of the great meccas for bird migration anywhere in the world. The confluence of several major flyways makes it the conduit for migrants of all taxa, but especially waterbirds during southbound migration. The Avalon Seawatch, which we hope you'll have a chance to visit, counts nearly one million migrating waterbirds every year. It's a spectacle you won't want to miss. There are also opportunities to witness significant raptor and passerine migration at various locations around Cape May Peninsula. There is a nearby state park, a state wildlife management area and two Nature Conservancy preserves that are great for hiking and nature watching.

The Local Planning Committee is excited to host you at the Waterbird Society's 50th Anniversary conference and to share the wonders of Cape May bird migration with you. Thank you for coming and let's have a great time!

David Mizrahi

Chair of the 50th Annual Waterbird Conference Planning Committee

Welcome from the Scientific Program Chair

My Dear Fellow Waterbirder,

Welcome to Cape May and our 50th anniversary meeting!

David Suzuki in 2009 wrote: “Science proceeds not in a beeline, but in a stagger, stumbling home in the darkness after a night at the pub, drunk on its own discoveries. Tomorrow, it may find that many of its theories were dead wrong. But tonight it will celebrate all it has learned and raise a toast to the questions it does not yet have the wit to ask”. This quote resonates to my core. The only thing better than feeling the drug of discovery in my veins, is to celebrate that knowledge with YOU, my fellow scientists. In Cape May, we celebrate our discoveries!

I have been honored to read your abstracts and arrange your moments of discovery for presentation over these 3 short days as a way of celebrating that fragment of the natural world **you** have brought to light. The world of knowledge is changed because of you. I only wish I could attend all your talks and read all your posters.

This activity of mine is only that much more rewarding during our 50th anniversary. Leaders of our society, people I have looked up to and respected since my first meeting in 1987 in Thunder Bay, collect their memories and thoughts to inspire the next generation. Recollection is not merely a listing of historical facts. I look forward to what emerges from the recollection process. If that were not enough the plenary that looks forward should be inspiring and challenging as well. AI, improved telemetry, drones and political challenges all await us!

This process is not merely factual, scientific and utilitarian. What good is science if it does not touch our hearts and motivate us to guard the biosphere that has been gifted to us? For me, being around you, your questions, and your discoveries are spiritual too. We are not taught this at University. Ancient wisdom teaches us to pursue knowledge and understanding, far more precious gifts than gold or silver. It also teaches us that animals can speak to us and impart valuable lessons.” Your discoveries are a glimmer of that language. How cool is that?

I want to thank all of you for allowing me to serve you as the Scientific Program Coordinator. I also want to extend a special thanks to Nellie and the local committee (New Jersey Audubon). All have worked hard! It is going to be an amazing meeting!!!

Sincerely,

John Brzorad

Waterbird Society President-elect

Local, Planning, and Scientific Program Committee Members

NJ Audubon

Lillian Armstrong
Stacey Dempsey-Patrick
David Mizrahi
Kristin Mylecraine
Kaitlyn Schneider
Nellie Tsipoura
Lena Usyk



Conserve Wildlife Foundation

Emmy Casper



NJ DEP Fish and Wildlife, Endangered & Nongame Species Program

Kashi Davis
Emily Heiser



The Wetlands Institute

Samantha Collins
Lisa Ferguson
Meghan Kolk



Lenoir-Rhyne University
John Brzorad



Local host: NJ Audubon

New Jersey Audubon is a privately supported, not-for profit, statewide membership organization. Founded in 1897, and one of the oldest independent Audubon societies. Our Mission is to “Inspire and empower people to care for nature throughout New Jersey and beyond”

New Jersey Audubon is an independent Audubon and is not a chapter of the National Audubon Society. To become a member and learn more about our mission, please visit njaudubon.org.

About the Waterbird Society

Our Mission

The Waterbird Society is an international scientific, not-for-profit organization whose mission is to foster the study, management, and conservation of the world's aquatic birds. The Society's primary goals are to: (1) promote the basic and applied research on waterbirds and their habitats, (2) foster science-based waterbird conservation globally, and (3) enhance communication and education at all levels – among professionals, policy makers, and citizens. To accomplish these goals, the Society publishes an international peer-reviewed journal, hosts scientific meetings, provides grants and awards, and facilitates other activities.

Our History

The Society was established in 1976 following the North American Wading Bird Conference held in Charleston, South Carolina, USA, and was named the Colonial Waterbird Group. The organization changed its name to the Colonial Waterbird Society in 1986. In 1999, the organization became the Waterbird Society to reflect an expanded interest in all aquatic birds.

Waterbird Society Council

Officers

- **President:** Nellie Tsipoura
- **Vice President:** John Brzorad
- **Secretary:** Kate Goodenough
- **Treasurer:** Liz Craig
- **Past – President:** Ricardo Zambrano

Elected Council Members

2024-2026

Ariam Jimenez	Ruth Boettcher	Jeffrey Costa
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2025-2027

Ann McKellar	Iain Stenhouse	Sabir Muzaffar
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2026-2028

Kristina Ramstad	Gemma Clucas	Alberto Yanosky
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Student Council Members

Indra Acharja
Jose Ramirez-Garofalo

Waterbirds Journal Editor

Juliet Lamb

Birding and Exploring Cape May

Staying at the Grand Hotel of Cape May puts you close to many of Cape May's best breweries, attractions, shopping, beaches, and waterfront experiences. Here are some favorite local spots for to explore during your stay.

Sights To See

- Cape May Lighthouse — One of the area's most iconic landmarks with panoramic coastal views from the top.
- Washington Street Mall — Cape May's charming pedestrian shopping district filled with boutiques, coffee shops, ice cream, and restaurants.
- Cape May Point State Park — Beautiful walking trails, birdwatching, beaches, and nature views just minutes from the hotel.
- World War II Lookout Tower — A restored historic tower offering scenic views and local WWII history exhibits.
- Cape May County Park & Zoo — A family-friendly attraction featuring hundreds of animals and free admission.
- Sunset Beach — Famous for incredible sunsets, beach walks, and the historic SS Atlantis wreck offshore.

Cape May Birder's Favorite Places To Eat

- [Mad Batter Restaurant & Bar](#) — A Cape May favorite known for brunch, cocktails, live music, and creative American cuisine in the heart of the historic district.
- [Fins Bar & Grille](#) — Casual coastal dining featuring seafood, sushi, cocktails, and outdoor seating near the Washington Street Mall.
- [Lucky Bones Backwater Grille](#) — A popular, family-friendly, year-round staple known for its scratch-made coastal comfort food, thin-crust brick oven pizzas, and the largest craft beer selection in the immediate area.
- [WAWA](#) - open 24/7. For birders heading out before sunrise or returning after a long day in the field, Wawa is a convenient stop for fresh food, snacks, fuel, and beverages any time of day or night and especially popular with early risers looking for a hot cup of coffee before heading out to catch the morning migration.

Local Breweries & Craft Drinks

- [Cape May Brewing Company](#) — One of New Jersey's most popular craft breweries featuring a large tasting room, beer garden, live music, and rotating seasonal brews.
- [Cold Spring Brewery](#) — Located inside Historic Cold Spring Village, this unique nonprofit brewery combines local history with handcrafted beer.
- [Nauti Spirits Distillery](#) — A local favorite for handcrafted spirits, cocktails, and outdoor seating close to downtown Cape May.

Field Trips

Time	Guided trips, Friday Nov 6
8:00am - 10:00am	The Nature Conservancy's South Cape May Meadows , Sunset Blvd., Cape May. Bird walk and possible songbird banding demo if open.
10:00am	Meet at Hawkwatch Platform at Cape May Point State Park . Birding from the platform and a walk around Bunker Pond
1:00pm	Cape May Whalewatch and Research Center Boat Trip offshore. Advance Registration and Payment Required . Ask in the Wicker Room at the Grand Hotel.
On your own; guides onsite	
Anytime	Visit the Avalon Seawatch on the beach in Avalon between 8th and 9th Streets. Interpretive naturalists are available between 8:00 am and 5:00 pm
Anytime	Visit the Hawkwatch Platform at Cape May Point State Park . Interpretive naturalists are available between 8:00 am and 5:00 pm

Meeting Venue

The Grand Hotel of Cape May is a beachfront resort and conference venue. The hotel has 171 rooms and suites, two ballrooms and three smaller meeting rooms, making it ideal for the Waterbird Society Conference.

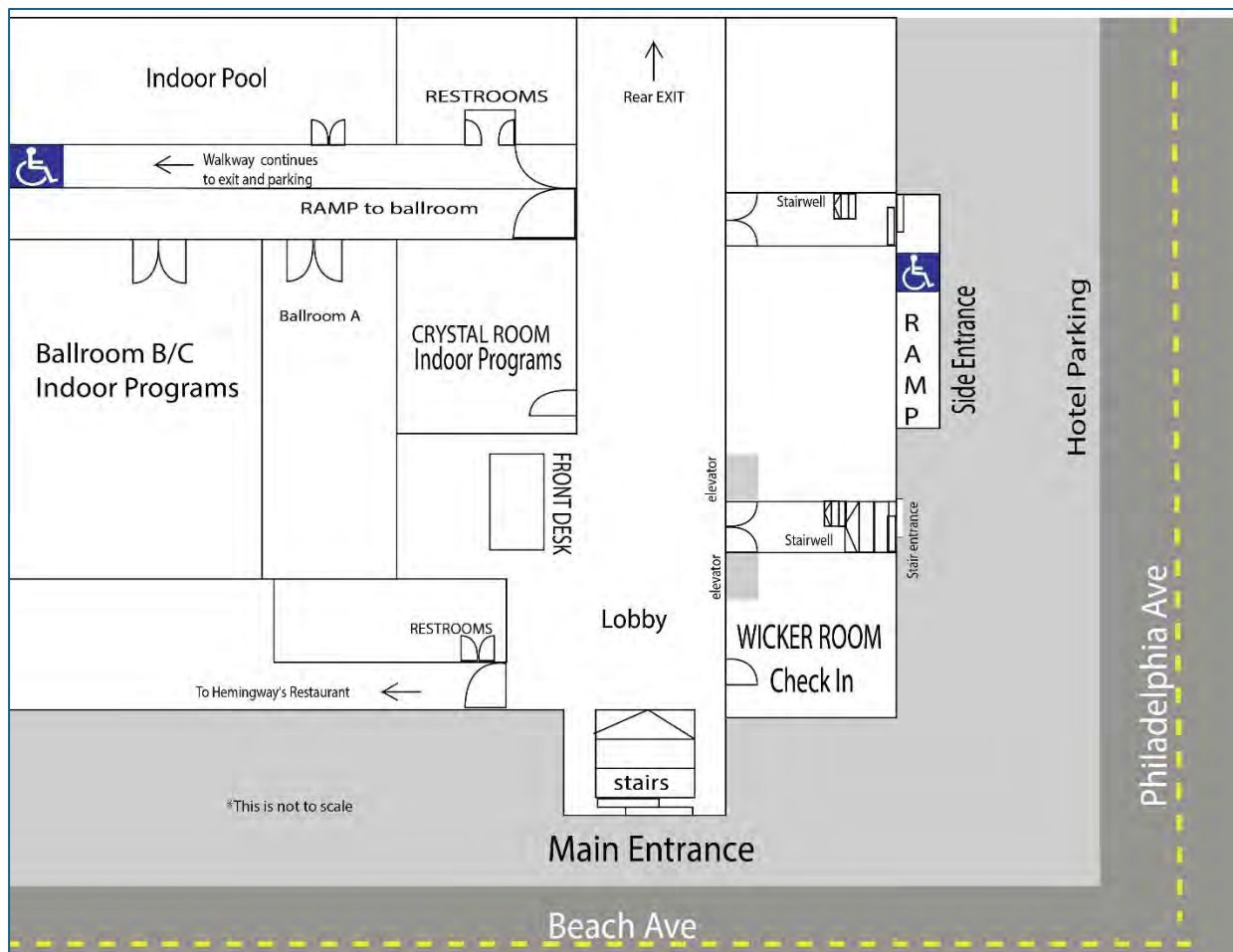
The Penthouse Ballroom is on the fifth (top) floor of the hotel and will be the location of the evening receptions, morning plenaries, lunches and banquet. With sweeping views of the ocean and the town, the elevators exit into a lovely space featuring an oak bar with plenty of room to mix and mingle before entering the ballroom.

The Grand Ballroom on the main floor will be divided into two rooms for concurrent sessions. Outside the Ballroom where folks enter is an elevated area for casual conversation on one side, and “Twitty’s Porch” on the other, where coffee breaks and light snacks will be served.

Located at 1045 Beach Ave, Cape May, NJ 08204

Phone: (609)884-5611

Check-in time is after 3:00 pm, Check-out time is before 11:00 am.



Parking In Cape May

Each room reservation at The Grand Hotel includes one complimentary parking pass, which permits free parking in designated hotel parking spaces.

Parking in Cape May is available throughout the city, including metered street parking, public lots, and hotel parking areas. There are free parking spaces on many side streets throughout town. These typically fill up early in the morning, but if you don't mind driving around, you can find occasional spaces open during the day.

Cape May utilizes the ParkMobile app for many public parking areas and meters. Parking meters are activated between the hours of 10am to 10pm.

Download or learn more about ParkMobile here:

<https://parkmobile.io/>

Where Can I Charge an Electric Vehicle?

ChargePoint stations are available at the Cape May Welcome Center (on Lafayette Street) and City Hall, and there are FLO Chargers at the West Cape May Municipal Complex at 732 Broadway. *Please use the apps/websites for those services to determine exact location, parking cost, availability, electricity cost, plug types, compatibility, etc.*

Does the Bluedot app work in Cape May? YES! The ChargePoint stations on Lafayette and Washington Street are listed, as well as the FLO chargers on Broadway.

How to get around in Cape May without a vehicle

Cape May offers several transportation options for visitors during their stay. Local taxi and ride services include:

- Uber is available throughout the Cape May area.
- Aarts Cape May Taxi — 609-898-7433
- G Taxi & Transportation — 609-600-7216
- Cape May Beach Buggy — On-demand local rides; advance booking by call or text is recommended at 609-600-7216

PROGRAM AT-A-GLANCE

	Business meetings/Plenaries
	Social activities
	Food and breaks
	Symposia
	Workshops/Roundtables
	Regular talks

Monday, November 2

8:30am-4:00pm	WbS Council Meeting	Crystal Room
8:30am-12:00	AMBC Business Meeting	Ballroom A
1:30pm-5:00pm	AMBC Breakout sessions	Ballroom A
6:00pm-8:00pm	Social-Icebreaker-Welcome	5th Floor Ballroom

Tuesday, November 3

7:30am-9:30am	Breakfast	5th Floor Ballroom
8:00am-8:30am	Announcements	
8:30am-9:30am	Plenary 1-The First 50 Years of the Waterbird Society	5th Floor Ballroom
9:30am-10:00am	Coffee Break	5 th Floor Ballroom
10:00am-3:00pm	AMBC Symposium	Ballroom C
10:00am-12:00	Contaminants & Disease	Ballroom B
12:00-1:00pm	Student Mentor Lunch	5th Floor Ballroom
12:00-1:00pm	Lunch	5th Floor Ballroom
1:00pm-2:40pm	Foraging & Fisheries/Physiology	Ballroom B
3:00pm-3:20pm	Coffee Break	Twitty's Porch
3:20pm-4:40pm	Conservation, Restoration & Policy	Ballroom C
3:20pm-5:00pm	Acoustics Workshop	Ballroom B
5:00pm-6:00pm	Meet the Editor of the WbS Journal	Ballroom C
6:00pm-8:00pm	Poster Session & Hors d'oeuvres	5th Floor Ballroom

Wednesday, November 4

7:30am-9:30am	Breakfast	5th Floor Ballroom
8:00am-8:30am	Announcements	5th Floor Ballroom
8:30am-9:30am	Plenary 2: The Waterbird Society; Looking Ahead	5th Floor Ballroom
9:30am-10:00am	Coffee Break	5 th Floor Ballroom
10:00am-11:40am	Urban Areas & Waterbird Conservation-Symposium & Panel	Ballroom C
10:00am-11:40pm	Breeding Biology	Ballroom B
10:00am-12:00	Accessible Birding Workshop	Crystal Room
12:00-1:00pm	Lunch & Black-Crowned Night Heron informal talk (separate table)	5th Floor Ballroom
1:00pm-3:00pm	Tools and Techniques	Ballroom C
1:00pm-4:40pm	Habitats & Distribution/Migration	Ballroom B
1:00pm-6:00pm	Waterbird Conservation Plan of the Americas	Crystal Room
3:00pm-3:20	Coffee Break	Twitty's Porch
3:20pm-5:00pm	Climate Change/Citizen Sci./Weight of Discovery	Ballroom C
6:00pm-until	LGBTQ+ Social	Restaurant of choice
6:00pm-until	Dinner	Restaurant of choice

Thursday, November 5th

7:30am-9:30am	Breakfast	5th Floor Ballroom
8:00am-8:30am	Announcements	5th Floor Ballroom
8:30am-9:30am	Plenary 3: Jan van der Winden; Birds of Change-Landscapes in Motion	5th Floor Ballroom
9:30am-10:00am	Coffee Break	5 th floor Ballroom
10:00am-12:00	Inland Common Tern Working Group	Ballroom C
10:00am-12:00	Using ESRI Field Maps	Ballroom B
12:00-1:00pm	Lunch	5th Floor Ballroom
1:00pm-4:40pm	Population Dynamics	Ballroom C
1:00pm-4:00pm	Movement & Behavior	Ballroom B
3:00pm-3:20	Coffee Break	Twitty's Porch
4:40pm-5:10pm	Plenary 4: Ian Nisbet; The Waterbird Society; Some thoughts about it's Past and Future	5th Floor Ballroom
5:10pm-6:10pm	Business Meeting	5th Floor Ballroom
6:30pm-9:30pm	Banquet	5th Floor Ballroom

PLENARY 1 NOVEMBER 3RD

The First 50 Years of the Waterbird Society

Speakers and Contributors

Dr. Joanna Burger, Distinguished Professor of Biology at Rutgers University in New Brunswick, has conducted research from Antarctica to the Arctic, from crabs to sea turtles, fish, birds, and mammals, often involving local stakeholders and Native Americans. She was a founding member of the then Colonial Waterbird Society and served as its third President. She has served on several national and international committees including for the National Academy of Sciences (National Research Council; Board on Biology), U.S. Fish & Wildlife Service, Environmental Protection Agency, National Oceanographic and Atmospheric Administration, Scientific Committee on Problems of the Environment (out of Switzerland), and the BVVA Awards Committee (out of Spain). She is a Fellow of the International Ornithologist's Union, the American Ornithologist's Union, The International Union for Pure and Applied Chemistry, and the American Association for the Advancement of Science. She received the prestigious Brewster Medal from the American Ornithologists Union, the Distinguished Achievement Award from the International Society of Risk Analysis, and the Lifetime Achievement Award from the PTIM Society located in Spain as well as the Kane Conservation Award from NJ Audubon, the Conservation Award from the Delaware Valley Ornithological Society, and the Conservation Award from the International Waterbird Society. She has published over 700 papers in refereed journals, and over 25 books, including the Parrot Who Owns Me (Random House), A Visual Guide to Birds (Reader's Digest), and Natural History of the Northern Pine Snake (Eco Publishing). Waterbirds remain her primary interest, and she continues following Population Levels, Reproductive Success and Contaminant Levels in colonial-nesting Birds in Barnegat Bay (50+ years), and Red Knots and other Shorebirds in Delaware Bay (since the 1980s). She also continues research on Pine Snakes in the New Jersey Pine Barrens since the late 1970s).



Michael Erwin was a founder of the then Colonial Waterbird Group at the 1976 Charleston SC wading bird conference. As a post-doc at UMass-Amherst, he conducted a three-year comprehensive seabird and wading bird colony inventory from Maine to Virginia that won an award from the Dept. of Interior. His career included a senior research position at the USGS Patuxent Wildlife Research Center, and later, he established a Research Faculty field location at the University of Virginia's Environmental Sciences Department. During his membership in the Waterbird Society, he held the positions of secretary, vice president, and president, and later became an editor of the journal. He was elected a Fellow of the AOU (now AOS). After retiring, he chronicled some of his more memorable field experiences working on waterbirds in five countries with a focus on the amateur birding public: M. Erwin. 2023 *Birds, Beaches, and Biologists*. Austin Macauley Publishers, New York).



Joanna and Mike prepared and are presenting years 1976-1986.

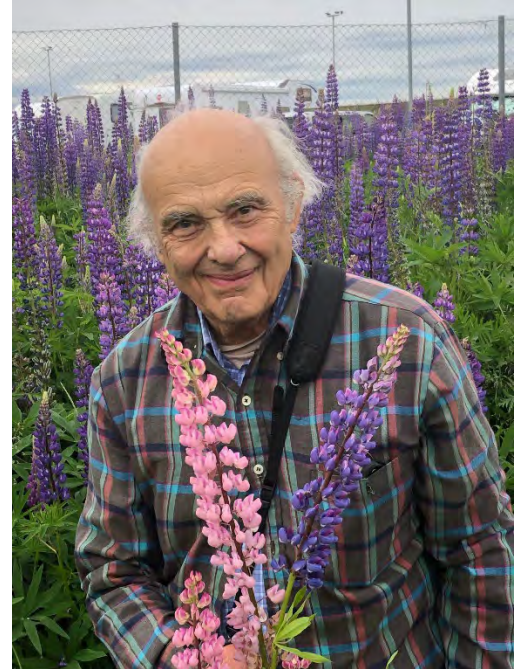
Don McCrimmon earned a Ph.D. in zoology from North Carolina State University in 1975. He then joined the Research Department of the National Audubon Society and was based at the Cornell Laboratory of Ornithology where he developed the first large-scale computer database for North American colonially nesting birds. He is a founding member of the Waterbird Society, serving as treasurer, secretary, vice-president, and president. He also served for four years as editor of *Colonial Waterbirds*. He is an Elected Member of the American Ornithological Society. Don's career featured leadership positions in New York, California, Maine and Michigan, during which he maintained continuous activity in research, publication, and teaching. In retirement he teaches environmental science and mentors undergraduate ornithological research at Le Moyne College in Syracuse, New York.



Don prepared the presentation for years 1987-1996.

Photo: Don with his wife of 57 years, Rena (left) and Maryanne Biggar-Ogden (right) wife of the late John Ogden, first president of the Waterbird Society, at Maryanne's home in South Stratford, Vermont. Photo taken June 2025.

Michael Gochfeld is one of the founding members of the Colonial Waterbird Group and served as chair of the By Laws Committee which finalized the By Laws and had them approved at the DeKalb CWG meeting. He was interested in nest site selection and coloniality in general, and the South Shore of Long Island, NY provided access to several waterbird colonies of terns, skimmers, and herons. He conducted banding and growth studies at nesting colonies in terns and skimmers on the Jones Beach “strip”. Over the years he has teamed up with Joanna Burger to participate in numerous studies of colonial waterbirds of many species in many habitats and many countries. He has written a monograph on anti-predator behavior of nesting birds, with an emphasis on species performing distraction displays. He was a regular participant in most of the early CWG meetings, submitting at least one paper a year to the nascent society journal, and continues to participate in Waterbird Society meetings and activities. Mike completed a PhD in ecology at the City University of New York-American Museum program, studying species discrimination in South American meadowlarks. He is also a physician who practices Environmental Toxicology and Occupational Medicine, with an emphasis on people and birds exposed to heavy metals such as lead, mercury, and cadmium. Building on this experience, he and Joanna have conducted many studies of heavy metal levels in birds and fish. The latter resulted in a front-page article in the New York Times on people exposed to mercury from Sushi. Mike is Professor Emeritus of Environmental Health and Occupational Medicine at Rutgers Robert Wood Johnson Medical School, where he continues to give lectures. ***Mike will be giving the presentation for 1987-1996***



John Anderson is the W.H. Drury professor of Ecology/Natural History (Emeritus) at the College of the Atlantic and has spent most of the past 40 years studying larids and other seabirds on off-shore islands in the Gulf of Maine. Pictured also (left to right) are Ezra Rowe, Emelia Lakebrink, and Autumn Pauly who helped Dr. Anderson with research into the history of the Waterbird Society.

John prepared and is presenting years 1997-2006.



Susan Elbin is scientist *emerita* at NYC Bird Alliance, aka NYC Audubon, having retired as Director of Conservation and Science in December 2019. She has been active in the field of avian ecology for more than 45 years. Her research has focused on urban ecology. Her team's decades of Harbor Heron waterbird program involved long-term monitoring and research on nesting and foraging herons, egrets, ibis, gulls, and cormorants in the New York Harbor. During her tenure she added more species to the study: oystercatchers, skimmers, terns, and sandpipers. Her landbird work involved the study of bird collisions with architectural glass and was instrumental in the passage of NYC's landmark bird-safe glass legislation.

Susan is a long-term member of the Waterbird Society and has held several leadership positions: president, secretary, council member, and chair/co-chair of several committees. She holds an MS degree in Ecology (Pennsylvania State University) and a PhD in Ecology and Evolution (Rutgers University). While adjunct professor at Columbia University, she designed and taught courses in ornithology and migration ecology and has mentored many grad students over the years. After her retirement, Susan and her husband moved to Grand Ledge, Michigan, where she serves on the Capital Area Audubon board. She continues her involvement with NYC Bird Alliance, the Bird-safe Building Alliance, and the Harbor Herons. Instead of cormorants and ibis, she now counts Turkey Vultures and Sandhill Cranes in Michigan.



Chip Weseloh grew up in small town Minnesota, 50 miles west of Minneapolis. He did his undergrad in General Science Education at Gustavus Adolphus College (1967, St. Peter, MN) but did not enjoy teaching the breadth of that subject (bird study took one week, if that!). He changed gears and went to grad school, first, doing a MSc-plant ecology study of a Great Blue Heron colony at Michigan Technological University (1969, Houghton, MI) and then his PhD on the Urban Ecology of Gulls at the University of Calgary (1976, Calgary, AB). He took a year off during that study and did a similar investigation in Toronto, ON, where he met his wife. He spent two years as the Curator of Ornithology at the Provincial Museum of Alberta in Edmonton and then they moved to Toronto. Chip started work with the Canadian Wildlife Service in 1978 as the chief field biologist for the Great Lakes Herring Gull Egg Contaminants Monitoring Program, where he visited hundreds of Great Lakes waterbird colonies. He retired in 2013 and became an Emeritus Associate with CWS and continued monitoring colonial waterbirds on islands in eastern Lake Ontario and roosting habits of Great Egrets throughout the Great Lakes. Chip and his wife are both birders, active with the Ontario Field Ornithologists, where they were the original editors of *Ontario Birds*, and where Chip is still an editor; they have four sons, and they raised 25 foster children.



Susan and Chip prepared and are presenting years 2007-2016.

Dave Moore has spent the past 35 years studying the behavioral, population and migration ecology of colonial waterbirds in Ontario. His Ph.D. was at Simon Fraser University (2002), studying the provisioning ecology of breeding Common Terns. Since 2005, he has worked as a Waterbird Biologist with the Canadian Wildlife Service – Ontario Region (Environment & Climate Change Canada), stationed in Burlington, Ontario. Dave has been an active member of the Waterbird Society since the early 1990s, serving on Council, as President and as the co-chair of various committees.



Patty Szczys is a Distinguished Professor and Director of the Center for Sustainability Studies at Eastern Connecticut State University, Connecticut's public liberal arts university. Her scholarly research has focused on the conservation of endangered and threatened seabirds while mentoring undergraduates as the next generation of scientists and engaged citizens. She has published more than 20 peer-reviewed papers and has delivered dozens of scholarly presentations. A longtime member of The Waterbird Society, she has held multiple leadership roles including President (2022-2024) and Associate Editor of *Waterbirds*. She earned a B.S. from the University of North Dakota and Ph.D. in Environmental Biology from the University of Massachusetts, Boston.



Dave and Patty prepared and are presenting years 2007-2016.

PLENARY 2, NOVEMBER 4TH

The Waterbird Society; Looking Ahead

Speakers

Indra P. Acharja is a doctoral candidate in Aquatic Resources and Integrative Biology at Texas State University, where he studies the ecology and conservation of the White-bellied Heron. Previously, he worked at the Royal Society for the Protection of Nature in Bhutan for more than 8 years, leading White-bellied Heron conservation projects, including establishing the species' first conservation breeding center. He is a member of the IUCN Heron Working Group, a National Geographic Explorer, and the current Waterbird student councilor.



Gemma Clucas is a Research Associate at the Cornell Lab of Ornithology where she leads the Seabird Conservation Analytics Team (SCAT). She specializes in using techniques such as fecal DNA metabarcoding, UAVs, and tracking to efficiently monitor seabird populations around the world.

Dr. Liz Craig directs the Isles of Shoals Seabird Ecology and Conservation Program and serves as an Academic Coordinator at Shoals Marine Laboratory (SML), a field station and summer institute jointly operated by the University of New Hampshire and Cornell University. Her research focuses on the conservation of aquatic birds in the Gulf of Maine through long-term monitoring, adaptive management, and student-driven research, with particular emphasis on seabird diet and foraging ecology. Before joining SML, Liz completed her Ph.D. in Zoology and Wildlife Conservation and postdoctoral research in Natural Resources at Cornell University, studying the foraging ecology of cormorants and other colonial waterbirds, and the migratory behavior and conservation management of Common Terns. Liz has been an active member of the Waterbird Society since attending her first meeting in Cape May, NJ, in 2009, and published her first peer-reviewed paper in *Waterbirds* in 2012. She has since served as an elected Council member and co-chair of both the DEI and Research Grants Committees, and currently serves as the Society's Treasurer.



Dr. Juliet Lamb is a Marine Scientist with The Nature Conservancy. Her research links movement and migratory patterns of seabirds with diets, population dynamics, individual health, and disease exposure in marine and terrestrial environments. Currently, her focus is on tracking seabird movements to inform marine spatial planning and fisheries management. She also works with various partners on managing and restoring seabird breeding habitats, identifying multi-species marine hotspots, using network models to understand biosecurity risks, developing scientifically-informed monitoring programs, and identifying ecosystem-based fisheries indicators. She has conducted research on a wide variety of seabirds species in the Gulf of Mexico, Gulf of Maine, New York Bight, North Sea, Mediterranean Sea, and Indian Ocean, and has studied other birds and wildlife in various locations across the United States, Central and South America, and Europe. She holds an A.B. in Environmental Science and Public Policy from Harvard University, a M.S. in Wildlife and Fisheries Conservation from the University of Massachusetts Amherst, and a Ph.D. in Wildlife and Fisheries Biology from Clemson University. She is the Editor-in-Chief of the journal *Waterbirds*, Chair of the World Seabird Union, Past Chair of the Pacific Seabird Group, and serves on the Continental Technical Team for the Sea Duck Joint Venture.



Dr. Kate L. Sheehan is an Associate Professor of Biology and coordinator of the Wildlife and Fisheries program at Frostburg State University. A parasite ecologist, she studies birds as ecosystems, examining how the organisms living on and within them reflect and influence their hosts' ecology and health. Her research integrates parasitology, disease ecology, and environmental contaminants, including relationships among parasites, plastics, and gut microbial communities in waterbirds, as well as the health and welfare of migratory shorebirds during stopover in Delaware Bay. She mentors graduate students whose varied research encompasses parasites and other symbionts of birds, mammals, and fishes. Their projects address host ecology; parasite competition and resource allocation; toxicology of parasites and their hosts; host histology and the detection of parasites in various organ systems; microbial communities of hosts, parasites, and food items; plastic pollution and its impacts on host and parasite communities; wildlife damage management; and human dimensions. Across these projects, she encourages both research that addresses applied wildlife challenges and exploration driven by pure curiosity about organisms and their interactions. She has served the Waterbirds Society as co-chair of the Grants Committee for the past four years and as a member of five additional committees, and her service also includes a past term on Council, reviewing student presentations, and chairing numerous symposia at Society meetings.



PLENARY 3 NOVEMBER 5TH

Birds of Change - landscape in motion

Artificial dynamics for stagnant freshwater lakes: a solution for birds at flyway level

Jan van der Winden

The human brain has a hard time dealing with dynamics. Waterbirds, on the other hand, have mastered it - the more dynamics, the better. What can we learn from them?

As scientists, we must immerse ourselves in the dynamic world of birds and, recognize that each individual bird makes its own choices. Yet we tend to simplify, thinking in terms of familiar and recognizable concepts. Large-scale nature developments can help us break out of fixed patterns and understand the impact of changing landscapes and the reaction of birds. In Europe, and especially in the Netherlands, deltas have been transformed into manageable landscapes with as little dynamics as possible. As a result, many bird species have disappeared or are now threatened. Restoring wetlands to their original state is usually impossible, but rehabilitating or creating semi-dynamic landscapes offers new opportunities. There are already inspiring examples of wetland rehabilitation or creation that have had a significant impact on bird populations at an international scale. In the Netherlands, we study how bird populations respond to the availability of such new habitats, examine breeding success in dynamic environments, and how different species disperse and colonize new areas. Species of interest include the black tern, common tern, pied avocet, little tern, bittern, spoonbill, great reed warbler and common pochard. Their population sizes and breeding success show strong pulses as a result of large-scale interventions. My aim is to inspire us not to be afraid of bold actions, by presenting compelling projects such as De Kreupel, closed estuaries and Marker Wadden. Here we conducted studies on the impact of rehabilitation on bird populations, colonisation processes and breeding success.

I work currently as an independent freelance avian ecologist. I did not follow the traditional path of an academic career, nor did I seek a university or research institute position. Because I didn't want to work alone, I co-founded the Lowland Ecology Network, a network of independent ecologists, who collaborate on ecological issues while also working individually. This involves research, surveys and consulting in an applied setting. My interests and expertise focus on marsh birds and colonial species found in wetlands and wetland ecosystems. I strive to use my expertise to contribute to policy issues, management and conservation of birds. I am also a guest researcher at the University of Groningen and a member of the Dutch Ecological Authority, which is consulted on national ecological policy issues.

During my applied career, I have been closely connected to a broad science community, and have published more than 50 peer-reviewed papers on bird



ecology and also popular papers. Since I was 12, I've been fascinated by birds, especially when they live in wetlands where I can wade, stroll, or boat through. I've travelled extensively throughout Europe and Africa in search of birds as they escape the Dutch northern winters. I also dislike cold weather so we meet in better places. The seasonal migration of birds adds a much needed dimension to understanding the influence of dynamic landscapes. My fascination for this role of migration was one of the reasons why, later in life, I decided to partly return to academia and begin a PhD program under the supervision of Theunis Piersma, professor emeritus at Groningen University

PLENARY 4, NOVEMBER 5TH

Ian Nisbet: The Waterbird Society-Some thoughts about its past and Future

Ian Nisbet was not a founder member of the society (although he took part in an early planning meeting in 1975), but was first involved in it in 1979, when he gave a paper at the third annual meeting of the 'Colonial Waterbird Group' in New York City: the proceedings of that meeting were subsequently published as the Transactions of the Linnaean Society of New York, vol XI, 1980. Since 1979 he has been closely associated with the Society and has attended most annual meetings since 1979, including meetings in eight countries outside North America. He served as Vice-President (1996-97) and President (1998-99); in the latter capacity, he oversaw the expansion of the society from 'Colonial Waterbird Society' to 'Waterbird Society.' He has contributed 53 publications to the journal, including 34 research papers or notes, ten book reviews and three commentaries. He has been awarded the Society's Robert Cushman Award for Distinguished Lifetime Research, the Kai Curry-Lindhal Award for Contributions to Conservation, and the Distinguished Service Award.



ROUNDTABLE/WORKING GROUPS

Waterbird Conservation Plan of the Americas

1:00pm-6:00pm Nov 4th Crystal Room

The purpose of the roundtable is to develop an approach for producing the next version of the 2002 North American Waterbird Conservation Plan. The title of the new version is Waterbird Conservation Plan of the Americas (WCPA) and its geographic scope will encompass the Caribbean and North, Central and South American countries. This effort will require a wide range of participants throughout the Americas and the Caribbean willing to commit to this important undertaking. The goal of the workshop is twofold. The first is to develop a process to identify and recruit waterbird biologists and managers and other subject matter experts that can help update waterbird population estimates, assess current and emerging threats, and develop conservation strategies within their professional and geographic jurisdictions. The second is to develop an organizational framework that will likely consist of working groups and working group leads designed to determine the format and content of the new Plan, identify waterbird focal species and habitats, gather and exchange information within and among working groups, prepare and review written sections of the new Plan, etc.

Inland Common Tern Working Group

Nov 5th 10:00am to 12:00 Ballroom C

The Inland Common Tern Working Group was formed at the Waterbird Society Meeting in Traverse Michigan. Our mission is to enhance inland Common Tern conservation in North America through developing a region-wide conservation planning network. This group of managers, researchers, and advocates from across the US and Canada, has met virtually several times to work on building connections, data collections, a status and priorities manuscript, outreach and a number of other related items. We plan to meet in-person annually to further our goals (update members on recent work, share results of data collection and list-serve development, finalize manuscript, discuss funding and next steps for group) and hope to do this at Waterbirds annual meetings.

SYMPOSIA

Atlantic Marine Bird Cooperative (AMBC), Nov 3rd 10:00am-3:00pm Ballroom C

The purpose of this symposium is to highlight current marine bird science, conservation efforts, and accomplishments within the Atlantic Marine Bird Cooperative (AMBC) focal area, and among AMBC members and partners.

AMBC Break-out Sessions, Nov 2nd 1:00pm to 5:00pm Ballroom C

In the afternoon these sessions will:

- 1) Facilitate information sharing and new collaborations on Northwest Atlantic marine birds through presentations and group discussion.
- 2) Encourage AMBC working group planning and pursuit of working group goals through break-out sessions.
- 3) Share working group updates, priorities, and needs with broader AMBC audience.
- 4) Revisit and continue to advance key components of AMBC organization & development for future growth and improvement.

Urban and Waterbird Conversation and Panel Discussion, Nov 4th 10:00am-12:00 Ballroom C

Across the world, urban areas host some of the most important remaining breeding and foraging habitat for waterbirds. For example, New York City supports the largest breeding population of long-legged wading birds in the Northeast and the majority of the state's nesting American Oystercatchers. Similarly, Boston Harbor supports a major wading bird colony, while Illinois' only significant Black-crowned Night Heron colony persists within Chicago. Panama Bay's mudflats, outside Panama City, Panama, provide critical refueling habitat for more than 1 million shorebirds each year.

Urban regions not only sustain important waterbird populations, but also offer unique opportunities for conservation because they concentrate people, institutions, and businesses that can drive awareness, funding, policy change, and habitat investment. Urban areas are essential to both waterbirds and people, yet they remain widely overlooked in conservation planning and public perception.

This symposium will challenge outdated assumptions that cities are ecological wastelands, with the goal of reframing how conservation practitioners think about cities. It will share examples of urban waterbird conservation successes and challenges and build momentum for recognition of urban areas as critically important to waterbird conservation in an increasingly urbanized world.

WORKSHOPS

Accessibility in Avian Fieldwork

Nov 4th 10:00am-12:00 Crystal Room

The purpose of this workshop is to expose participants to different barriers to participation in avian fieldwork and options for creating conditions that maximize accessibility and participation.

Passive Acoustic Monitoring

Nov. 3rd 3:20pm to 5:00pm Ballroom B

Passive acoustic monitoring (PAM) is becoming a common tool in avian conservation and ecology thanks to the availability of autonomous recording units (ARUs) and pretrained sound identification models. This workshop will help participants learn how to incorporate PAM into their own research with waterbirds. It will be divided into two parts. First, we will cover proper use and deployment of ARUs. Second, we will walk through the use of software for processing audio data into a useful verified output. Each section will include a lecture, a Q&A/discussion session, and a hands-on tutorial. Take-home resources will include a document with references for exploring later, including more advanced topics related to PAM not covered in the workshop, transcriptions of each Q&A period, and a copy of our slides and notes. Additionally, we will showcase our lab's new free tool for bioacoustic analysis, Dipper, which can be used to apply species classifiers to field data, create listening strategies for verification, and efficiently annotate recordings.

Using ESRI Field Maps

Nov 5th 10:00am to 12:00 Ballroom B

After this workshop attendees will be familiar with the process of designing a new project for data collection in ESRI's Field Maps app. We will review all ESRI apps available, discuss the differences in each, and then focus on a work plan to start a project in Field Maps. Topics are suitable for a range of skill levels from beginner up.

LIST OF POSTER PRESENTATIONS

Prabhat Adhikari(s)	Climate change threatens global lake habitats of the Common Pochard (<i>Aythya ferina</i>): A MaxEnt-based assessment of future habitat loss and conservation vulnerability
Dina Alter(s)	High Pathogenicity Avian Influenza Transmission Dynamics in Gentoo Penguins (<i>Pygoscelis papua</i>) in a South Atlantic Archipelago
Mario Balitbit(s)	Tracking Saltmarsh Willet (<i>Tringa semipalmata</i>) populations from Virginia, USA, throughout their annual life cycle
Elizabeth Bevis(s)	A quantitative assessment of ingested microplastic impact on gut microbiome in Double-crested Cormorant (<i>Nannopterum auritum</i>).
Katherine Biardi(s)	Effects of Salt Marsh Restoration on Saltmarsh Sparrow Populations in New York
Malia Breezee(s)	Microplastic Exposure in Freshwater Wading Birds: Pellet Analysis of the Great Blue Heron in the Upper Mississippi Watershed
Mara Cobb(s)	Effects of Environmental PFAS on Immune Function of Juvenile Brown Pelicans in the Cape Fear River
A Cox(s)	Getting Your Gulls in a Row: the Impact of Human Presence on Aggressive Behaviors in Nesting Herring Gulls
Samuel Denenberg	A Comparison of Common Survey Methods for Estimating Black-crowned Night Herons
Ryan Dews(s)	Trace Elements Concentrations in Three Species of Piscivorous Birds within the Florida Bay Region
Will Draxler(s)	Behavioral factors influencing colonial nest site selection of the American Herring Gull
Hugh Ellis	Cost of Flight in Arctic Terns (<i>Sterna paradisaea</i>) using Different Methods
Hailey Glasko	Avian species diversity in marshes along the Delaware Bay coast in Delaware, USA
Natasha Gownaris	Terns as Bioindicators for Atlantic Herring Distribution in the Gulf of Maine
Holly F. Goyert	A Quantitative Assessment of Risk to Seabirds and Migratory Landbirds from Energy Development in the Gulf

Rolando Gutierrez	Topography and Shoreline Position Are Associated with Hurricane Flood Exposure of Beach-Nesting Birds on an Urban Barrier Island
Max Henschell	35 years of waterbird counts at Whitefish Point Bird Observatory, what can we learn?
Davis Hinds	Uncovering temporal patterns of successful reproduction in Virginia Rail (<i>Rallus limicola</i>) using an automated acoustic classifier.
Naoma Huta(s)	Nest-Site Distribution and Behavior During the Chick-Rearing Period of Great Black-backed Gulls
Will Jackson	Predation – An Ongoing Challenge for Common Terns on Poplar Island, Chesapeake Bay, Maryland
Casey Manera(s)	Assessing seasonal patterns in the abundances of red knots and black-bellied plovers and their benthic and terrestrial prey on stabilized and unstabilized barrier islands in coastal Virginia to best guide management actions.
Jessica McNulty	Ruddy Turnstone (<i>Arenaria interpres</i>) Home Range Size and Composition During Migratory Stopover in the Delaware Bay
Braxton Sizemore(s)	Evaluating the scale and role of an apex terrestrial predator in high pathogenicity avian influenza transmission across the Falkland/Malvinas Islands
Joseph Smith	Results of Eastern Black Rail surveys at E.B. Forsythe National Wildlife Refuges, 2021-2026
Amanda R. Stofko(s)	From Lab to Field: Developing and validating a method for genetic sex determination for Common Terns (<i>Sterna hirundo</i>) under field conditions
Stephanie Strazzi(s)	Diet Composition of Nesting Great Egrets and Snowy Egrets at Lake Okeechobee, Florida.
Jeffery Sullivan	Highly pathogenic avian influenza H5N1 prevalence and seroprevalence in sympatric waterfowl and waterbirds, Sacramento NWR, California, USA
Shawn Sullivan	Focused Predator Management for Least Terns in Delaware Shows Early Success
Angelina Tang(s)	Changing public perceptions of declining Common Tern populations in inland North America through a comprehensive outreach program

DETAILED PROGRAM

Tuesday, November 3rd, Session 1

	Ballroom C	Ballroom B
Time Start	Atlantic Marine Bird Cooperative Symposium	Contaminants & Disease Moderator: Kate Sheehan
10:00am	Richard Veit <i>Exploratory Behavior and Colonization by Lesser Black-backed Gulls</i>	Diann Prosser An Overview of Current Research on the Exposure and Response of Waterbirds to Highly Pathogenic Avian Influenza
10:20am	Juliet Lamb Drivers of full annual cycle movements of Great Black-backed Gulls (<i>Larus marinus</i>) breeding in Southern New England	Kira Staehler(s) Endoparasite Communities of Laridae and Procellariidae Seabirds from South Florida
10:40am	Esther Nosazeogie(s) Thermal soaring in great black-backed gulls (<i>Larus marinus</i>) in the Northeast US	Cindy T. Barreto(s) Disease detection in Pectoral Sandpiper (<i>Calidris melanotos</i>) from host genome sequencing
11:00am	Evan Adams Connecting flight and dive behaviors of wintering Northern Gannets (<i>Morus bassanus</i>) in the NW Atlantic	Kate Sheehan Exploring the Symbiome: Parasite and Microbial Communities in Semipalmated Sandpipers
11:20am	Kate Williams Estimating collision risk from offshore wind energy development	
11:40am	Kate Williams Offshore wind energy development and birds: Sharing information about risk and developing guidance for monitoring	

Tuesday, November 3rd, Session 2

	Ballroom C	Ballroom B
Start Time	Atlantic Marine Bird Cooperative Symposium	Foraging & Fisheries/Physiology Moderator: Hugh Ellis
1:00pm	Kayla Davis Population dynamics of Roseate Terns in the Northwest Atlantic: Building a foundation for assessing offshore wind energy impacts	Emelia Lakebrink(s) Influence of lobstering activity on the foraging ecology of American Herring Gulls (<i>Larus smithsonianus</i>) in Maine
1:20pm	Shea Fee Post-breeding ecology of Roseate Terns on Nantucket, Tuckernuck, Muskeget, and Chappaquiddick Islands, Massachusetts	Jennalie Lutes(s) Evaluating Regional Prey Communities And Stable Isotope Signatures For Lake Okeechobee Wading Birds
1:40pm	Peter Paton Differences in post-fledging ecology of Common and Roseate Terns from Great Gull Island	Annie Bracey Linking Common Tern (<i>Sterna hirundo</i>) diet and mercury exposure using eDNA
2:00pm	Patrick Jodice Identifying data needed to estimate menhaden consumption by breeding brown pelicans	Jackson van Pelt(s) Leg and foot damage rates in Leach's Storm-Petrel differ across two northwest Atlantic colonies
2:20pm	Katharine Goodenough Black Skimmer Foraging Ranges Reveal a Shift in the 2026 Coastal Foodscape	Derek Fucich(s) Physiological Feedbacks of two Gull Species to Anthropogenic Food
2:40pm	Paul Spitzer A LONG-TERM SYNTHESIS: Cumulative Ecological Studies of Non-Breeding Common Loons	

Tuesday November 3rd, Session 3

	Ballroom C	Ballroom B
Start Time	Conservation, Restoration & Policy Moderator: Ricardo Zambrano	Passive Acoustic Monitoring Workshop
3:20pm	Alexandra Wilke “Elevating” American Oystercatcher conservation in Virginia – artificial nesting platforms to reduce flooding risk	Passive Acoustic Monitoring Workshop
3:40pm	Jonathan Bagarinao(s) Shared Tides, Competing Needs: Spatiotemporal Overlap and Behavioral Responses of Migratory Shorebirds to Coastal Harvesting Activity in Ormoc Bay Wetlands	Passive Acoustic Monitoring Workshop
4:00pm	Emily Blumentritt Flooding risk assessment for nests of imperiled shorebirds in South Texas	Passive Acoustic Monitoring Workshop
4:20pm	Carl Brzorad Protecting the Rufa Red Knot Across the South Carolina Coast	Passive Acoustic Monitoring Workshop
4:40pm	Stephanie Feigin The importance of a habitat matrix for a federally threatened shorebird: Red Knot movements within the Delaware Bay, New Jersey (USA) migratory stopover	Passive Acoustic Monitoring Workshop

Wednesday, November 4th, Session 1

	Ballroom C	Ballroom B	Crystal Room
Start Time	Urban Areas and Waterbird Conservation Symposium	Breeding Biology Moderator: TBA	Accessibility in Avian Fieldwork Workshop Freya McGregor
10:00am	Emilio Tobon Shifting phenology of urban American Oystercatchers in a changing world	Marissa Lamb(s) Influence of Water Levels on Nest Survival of Black Skimmers and Caspian Terns on Texas Colony Islands	Accessibility Workshop
10:20am	Dustin Partridge Steep declines of colonial wading birds in northeastern North America's largest breeding population: The next steps for conservation	Kiara Valentine Thermoregulation during incubation in the beach-nesting birds of southwestern Louisiana	Accessibility Workshop
10:40am	Nikolas Dahmen(s) Foraging Behavior of Wading Waterbirds in a Semi-Natural Environment	Kayla M. Cannon(s) Temporal and spatial variation in nest defense behavior in a colonially breeding seabird, the Great Black-backed Gull (<i>Larus marinus</i>)	Accessibility Workshop
11:00am	Ryce Hailes(s) Integrating Socio-cultural Values of Coastal Texans into Rookery Island Restoration	Liam Taylor Long-term changes in the egg-laying schedules of Leach's Storm-Petrels	Accessibility Workshop
11:20am	Urban Waterbirds: Panel Discussion	Mateusz Ledwon Female offspring desertion in the Whiskered Tern (<i>Chlidonias hybrida</i>): benefits, costs, hormones and sexual segregation	Accessibility Workshop
11:40am	Urban Waterbirds: Panel Discussion		Accessibility Workshop

Wednesday, November 4th, Session 2

	Ballroom C	Ballroom B	Crystal Room
Start Time	Tools & Techniques Moderator: Susan Elbin	Habitats & Distribution/Migration Moderator: TBA	Waterbird Conservation Plan of the Americas Sara Schweitzer Ruth Boetcher
1:00pm	Jennifer Bradley(s) Spatiotemporal Patterns of Nest Predation in Piping Plovers: Implications for Exclosure Deployment	Rolando Gutierrez Shared Beaches, Contrasting Spatial Dynamics: Interannual Nesting Distribution of Shorebirds and Seabirds on an Urban Barrier Peninsula	Conservation Plan Roundtable
1:20pm	James D M Tolliver An experimental design for assessing the drivers of observer bias in sUAS surveys of waterbirds	Vasco Mendes A network-based approach to prioritizing waterbird stopover sites along the Atlantic Flyway	Conservation Plan Roundtable
1:40pm	Joshua Driscoll(s) Small-Scale Automated Radio Telemetry and Habitat Selection of Eastern Whip-poor-will in the Northeast United States	Indra Acharja(s) Declining breeding performance in the critically endangered white-bellied heron (<i>Ardea insignis</i>) coincides with anthropogenically driven habitat contraction in Bhutan	Conservation Plan Roundtable
2:00pm	Patrick Lyon(s) Comparing Classifiers for Automated Acoustic Detection of Eastern Black Rail (<i>Laterallus jamaicensis jamaicensis</i>) from Field Recordings	Rebecca Bracken Examining long-term changes in Wilson Plover nesting sites along the upper coast of Texas	Conservation Plan Roundtable
2:20pm	Rostram Mirzadi Comparing ground-based and drone-derived nest counts of waterbird breeding colonies	Samantha Collins Early insights into nest site selection and reproductive success for American Oystercatcher breeding pairs on salt marsh islands in New Jersey	Conservation Plan Roundtable
2:40pm	Brooke Goodman Acoustic localization creates a detailed record of secretive marsh bird breeding behaviors		Conservation Plan Roundtable

Wednesday, November 4th, Session 3

	Ballroom C	Ballroom B	Crystal Room
Start Time	Climate Change/Citizen Science/Wt. of Discovery Moderator: Juliet Lamb	Habitats & Distribution/Migration Moderator: TBA	Waterbird Conservation Plan of the Americas
3:20pm	Jessica Espinosa Coupling inundation modeling with bird observation data to estimate future climate-mediated habitat loss for federally listed roseate terns (<i>Sterna dougallii dougallii</i>) in the Caribbean region	Rasheed Pongnon(s) Impact of climate and land use change on Pacific flyway waterfowl harvest distribution	Conservation Plan Roundtable
3:40pm	Liam Wolff Waterbird casualties from a severe hailstorm in coastal Texas, USA: a rising threat in a warming climate	Camille Alvino(s) Ecological and geomorphological drivers of migrant Red Knots (<i>Calidris canutus rufa</i>) and Black-bellied Plovers (<i>Pluvialis squatarola</i>) on stabilized versus unstabilized barrier islands in Virginia.	Conservation Plan Roundtable
4:00pm	Kennedy Sullivan(s) Boaters and Plovers: Local community attitudes and social norms toward recovery efforts of a federally endangered shorebird at the edge of its range.	Allison Anholt Shifting shorebird dynamics at a critical stopover habitat in Washington State	Conservation Plan Roundtable
4:20pm	Grace Guo(s) Effects of GPS tag attachment on provisioning behavior and productivity of Roseate Terns (<i>Sterna dougallii</i>)	Lena Usyk Bandedbirds.org: A Web-based Relational Database for Reporting and Retrieving Observations of Individually Marked Birds	Conservation Plan Roundtable
4:40pm			Conservation Plan Roundtable
5:00pm			Conservation Plan Roundtable

Thursday, November 5th, Session 1

	Ballroom C	Ballroom B
Start Time	Inland Common Tern Working Group	Using ESRI Field Maps
10:00am	Tern Working Group	ESRI Workshop
10:20am	Tern Working Group	ESRI Workshop
10:40am	Tern Working Group	ESRI Workshop
11:00am	Tern Working Group	ESRI Workshop
11:20am	Tern Working Group	ESRI Workshop
11:40am	Tern Working Group	ESRI Workshop

Thursday, November 5th, Session 2

	Ballroom C	Ballroom B
Start time	Population Dynamics Moderator: Danielle D'Auria	Movement & Behavior Moderator: Katharine Goodenough
1:00pm	Joseph E. Brosseau(s) Using Spatially Explicit Citizen Science Data to Assess the Population Trends of a Cryptic Waterbird	Autumn Pauly(s) Birds of a Feather Don't Always Forage Together: Spatial Partitioning Among American Herring Gull Colonies in the Gulf of Maine
1:20pm	Mads E. Ellms It's a Gull's World: What long-term banding can teach us about an underappreciated species	Ezra Rowe(s) Fine-scale foraging behavior of chick-provisioning Black Guillemots (<i>Cepphus grille</i>) in Maine
1:40pm	Chance Hines Recent Reproductive Deficits in Chesapeake Bay Ospreys	Jennifer C. Rock Building resilient seabird networks: tracking tern dispersal for adaptive conservation planning
2:00pm	Allison Black Monitoring the marine ecosystem in the northeast: A look at seabird trends and highlights in a multi-year data set.	John Anderson The Signal and the Noise: Movements of Herring Gulls along the Western Atlantic Coast.
2:20pm	Chelsea Sweeney(s) Royal Tern productivity and juvenile return rates during relocation efforts at an urban colony in Virginia	Lindsay Addison Tracking Royal and Sandwich Tern (<i>Thalasseus maximus</i>) and (<i>T. sandvicensis</i>) throughout the annual cycle: new information on winter site fidelity and migration routes
2:40pm	Ariam Jimenez Two Seabirds, Two Trajectories: Black Skimmers, Least Terns, and a Changing Nesting Landscape in Florida.	Lisa Ferguson Habitat use and movements of Black Skimmers nesting within a key colony in New Jersey

Thursday, November 5th, Session 3

	Ballroom C	Ballroom B
Start Time	Population Dynamics Moderator: Danielle D'Auria	Movement & Behavior Moderator: Katharine Goodenough
3:20pm	Danielle D'Auria Annual survival of Black Terns (<i>Chlidonias niger</i>) breeding in Maine, USA, 2021-2026	Abigail Darrah Least Tern breeding dispersal is correlated with individual and colony-level reproductive outcomes
3:40pm	Olivia Smith(s) Spatial and temporal fluctuations of a mixed-species wading bird colony in the Atlantic Northeast	Mateusz Ledwon Uncovering the hidden: offspring desertion and renesting in the Black-crowned Night Heron (<i>Nycticorax nycticorax</i>) revealed by telemetry
4:00pm	Dave Moore Population-level effects of highly pathogenic avian influenza mass mortality events on Caspian Terns nesting in the Laurentian Great Lakes	
4:20pm	William Bowerman Decrypting population impacts of catastrophic weather events and HPAI for Bald Eagles in Michigan amidst federal budget cuts and a pandemic	
4:40pm		
5:00pm		

Presentation Abstracts

Abstracts: Combined oral and poster presentations arranged alphabetically by presenting author

Declining breeding performance in the critically endangered white-bellied heron (*Ardea insignis*) coincides with anthropogenically driven habitat contraction in Bhutan

Indra Acharja, M. Clay Green

Texas State University, San Marcos, TX, United States

Abstract

Anthropogenic pressures increasingly displace threatened species into remnant habitats, yet the demographic consequences are rarely quantified. We assessed 23 years of spatiotemporal change in distribution and breeding performance of the white-bellied heron (*Ardea insignis*) in Bhutan, where more than 45% of the population and most of the nests are found. We documented significant contraction in occurrence to lower latitudes and altitudes across three development periods (Kruskal–Wallis: latitude $\chi^2 = 175.62$, elevation $\chi^2 = 154.71$; both $p < 0.001$), coinciding with a shift in forest-type use and a transition in nesting substrate. At the same time, breeding performance continued to deteriorate, with location-year failure rates increasing from none recorded in 2003–2010 to 43.5% in 2019–2025 ($\chi^2 = 9.02$, $df = 2$, $p = 0.011$), and mean productivity declined from 2.08 to 1.09 fledglings per territory (Kruskal–Wallis $H = 7.79$, $p = 0.020$). Clutch size was stable across all periods (Kruskal–Wallis $H = 0.26$, $p = 0.878$), indicating failure was driven by post-laying failures. Sensitivity analysis supported the failure-rate trend assuming one undetected early failure ($p = 0.027$), but it became marginal with two ($p = 0.077$). The coinciding decline in breeding performance is associated with altered predation regimes, foraging constraints, and demographic stochasticity as compounding factors. Because the population is extremely small and breeding is concentrated into a few territories, each successful fledging event has disproportionate importance for population persistence. Conservation should therefore prioritize protecting remaining low-disturbance valleys, implementing active nest-protection measures, and maintaining long-term standardized monitoring.

Student

Connecting flight and dive behaviors of wintering Northern Gannets (*Morus bassanus*) in the NW Atlantic

Evan Adams¹, Julia Gulka¹, Kimberly Lato², Esther Nosazeogie³, Lesley Thorne³, Kathryn Williams¹

¹Biodiversity Research Institute, Portland, ME, United States. ²University of New Hampshire, Durham, NH, United States. ³Stony Brook University, Stony Brook, NY, United States

Abstract

The Northwest Atlantic Ocean is changing rapidly, from warming water temperatures to ongoing offshore energy development. These changes will affect seabirds through different mechanisms, including altering preferred foraging grounds and flight behaviors. Environmental conditions above and below the ocean's surface can affect seabird behaviors and are central to understanding drivers of movement and behavior. We hypothesize that flying behaviors are influenced solely by atmospheric conditions, and diving behaviors can be shaped by conditions above and below the water. Using location, flight height, accelerometry, and dive data from 60 GPS tracking devices deployed on Northern Gannets (*Morus bassanus*), we describe flight height distributions and test competing hypotheses about what factors affect diving behavior. We estimated flight heights from GPS altitude recorded at 1-second intervals in 20-second bursts and quantified diving behavior using a time-depth recorder. We used state-space altitude models to estimate flight heights and separate process and measurement uncertainty. Median flight height for gannets was 5 m, but the mean was much higher (23 m) because the altitude data were skewed and model uncertainty. Using flight heights and other estimates of movement behavior, we used structural equation modeling to compare the strength of atmospheric vs. oceanographic conditions for predicting diving rates. We found that oceanographic conditions contributed more to explaining diving behaviors, though flying behaviors were influenced by atmospheric conditions. Understanding connections between flying and foraging behaviors will be key to understanding how a changing environment will impact seabird behaviors and ultimately population dynamics.

Tracking Royal and Sandwich Tern *Thalasseus maximus* and *T. sandvicensis* throughout the annual cycle: new information on winter site fidelity and migration routes

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Abstract

Since 2024, we have used mark-recapture and GPS tracking to characterize fine-scale movements of Royal (*Thalasseus maximus*) and Sandwich (*T. sandvicensis*) Terns breeding in North Carolina, to identify stopover and wintering areas, and examine variation in movement strategies across individuals and annual-cycle stages. Data reveal substantial individual variation in migratory strategy within both species, with birds using similar routes but differing in timing, movement rates, and stopover behavior. Wintering destinations were similarly diverse, spanning southeastern Florida, Cuba, and sites throughout Central and South America. Notably, we document for the first time a Sandwich Tern migrating from North Carolina to Colombia, Ecuador, and Peru. Yet where individual Royal Terns were tracked across multiple years, they returned to the same wintering locations, indicating strong site fidelity. Despite a currently small sample size, this pattern of flexible migratory routes paired with consistent, individual-level wintering-site selection suggests birds repeatedly exploit familiar, predictable marine resources, while facing heightened vulnerability to shifts in prey distribution, habitat availability, and coastal conditions at repeatedly used sites. These terns depend on a geographically extensive network of natural areas and protected sites across the Americas during the non-breeding season. Maintaining this trans-national network of stopover and wintering habitat will help ensure these currently stable waterbird populations remain so.

Climate change threatens global lake habitats of the Common Pochard (*Aythya ferina*): A MaxEnt-based assessment of future habitat loss and conservation vulnerability

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Abstract

Climate change and intensifying anthropogenic pressures are altering freshwater ecosystems worldwide, with potentially major consequences for migratory waterbirds that depend on lakes and wetlands throughout their annual cycle. The common pochard (*Aythya ferina*), a globally threatened diving duck, relies extensively on freshwater habitats for breeding, migration, and wintering, yet the future distribution of suitable lake habitats remains poorly understood. We assessed the relative importance of environmental predictors and projected current and future global habitat suitability for the common pochard under climate change and anthropogenic disturbance. Species distribution models were developed using the Maximum Entropy (MaxEnt) algorithm and integrated with a global lake database to quantify habitat loss, expansion, and regional vulnerability for 2041–2060 and 2081–2100. The Human Influence Index contributed 78.68% to the model, indicating a strong influence of anthropogenic pressure on habitat suitability. Under current conditions, 164,706 lakes worldwide were classified as moderately to highly suitable. Under SSP5-8.5 by 2081–2100, approximately 44,100 currently suitable lakes were projected to lose suitability, whereas only 6,686 lakes were projected to gain suitable habitat. Projected habitat loss was greatest in Africa (87.6%), followed by South America (61.04%) and North America (51.0%). Declining suitability was also projected for major North American lakes, including Lakes Superior, Michigan, and Ontario. Literature-based evidence further indicated that boating, tourism, fishing, pollution, and shoreline development may compound climate-driven impacts. These findings identify vulnerable freshwater systems and priority regions where targeted conservation and management could help safeguard future habitat for the common pochard.

Student

High Pathogenicity Avian Influenza Transmission Dynamics in Gentoo Penguins (*Pygoscelis papua*) in a South Atlantic Archipelago

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Abstract

High pathogenicity avian influenza (HPAI) has recently expanded into previously unaffected wildlife populations, including sub-Antarctic seabirds. This has led to numerous large-scale mortality events, but drivers of viral transmission and persistence among these new populations remain poorly understood. Gentoo penguins (*Pygoscelis papua*) in the Falkland Islands, a sub-Antarctic archipelago off the southeast coast of South America, have experienced large scale die-offs due to HPAI each year since the virus's arrival in 2023. We investigated evolutionary dynamics of HPAI viruses circulating in the gentoo penguin population in the Falkland Islands, as well as host responses to the virus, in order to better understand factors influencing viral persistence. To do this, we collected samples from symptomatic or deceased penguins, as well as apparently healthy penguins in the Falkland Islands. We extracted viral RNA from tissue/swab samples, and sequenced the virus genome, generating over 50 new HPAI sequences circulating among the gentoo penguin population over the past three years. We reconstructed the evolutionary history of the virus using phylogenetics to untangle a story of local viral persistence and a possible drive: viral mixing between gentoo colonies. Additionally, we screened blood samples for anti-influenza antibodies and identified a promising trend among gentoo penguin colonies. Colonies with previous outbreaks demonstrated development of antibodies against influenza, indicating that despite large levels of mortality, some gentoo penguins can survive infection. These findings are crucial for informing conservation strategies to support birds and mammals in the sub-Antarctic and beyond.

Student

Ecological and geomorphological drivers of migrant Red Knots (*Calidris canutus rufa*) and Black-bellied Plovers (*Pluvialis squatarola*) on stabilized versus unstabilized barrier islands in Virginia.

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Abstract

In 2020–2021, breakwater installation, riprap revetment extension, and a renourishment project occurred at Wallops Island, Virginia, to protect NASA's Wallops Flight Facility from sea-level rise and beach erosion. However, the project's effects on migratory shorebirds and their benthic prey were unknown. We evaluated how stabilization actions affected the presence of foraging Red Knots (*Calidris canutus rufa*) and Black-bellied Plovers (*Pluvialis squatarola*), and the abundance of benthic prey, at Wallops Island compared with nearby unstabilized islands. We completed point count surveys for migrant shorebirds and collected core samples to examine benthic prey during spring and fall migration in 2024 and 2025. We used Bayesian mixed-effects modeling to quantify associations between shorebirds, prey, stabilization, and several ecological and geomorphic predictors. We found that Red Knot presence was more likely farther from stabilization in all habitat types. However, stabilization was a weak predictor of Red Knot presence, relative to other factors. Black-bellied Plovers were more likely to be farther from stabilization in peat, bay, and pool habitats, all of which occurred outside of the stabilization footprint. However, Black-bellied Plovers were more likely to occur closer to stabilization in sandy ocean intertidal habitat. Both Red Knots and Black-bellied Plovers were more likely to be present when other shorebirds were present, and prey group richness increased. Our results show lingering positive and negative relationships between stabilization actions on shorebirds and their prey from 4-5 years earlier and emphasize the importance of long-term monitoring of imperiled shorebirds on Virginia's barrier islands amid rapidly changing coastlines.

Student

The Signal and the Noise: Movements of Herring Gulls along the Western Atlantic Coast.

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Abstract

For over a century, Ornithologists and other Ecologists have worked on applying increasingly sophisticated statistical models to field data in order to extract general patterns that can be applied to a range of ecological and evolutionary questions. While these models can prove to be powerful tools in making generalizations, they may obscure the activities of individual organisms, which operate with a high degree of independence. Advances in technology allow us a greater degree of resolution in the action of individuals, which in turn may complicate our desire for generalization. Here I discuss some behaviors of Herring gulls (*Larus smithsonianus*) tagged with GPS tags in eastern Maine, USA. Birds were captured on the nest and fitted with solar powered backpack devices (Cellular Tracking Technologies) allowing us to follow them during the breeding and non-breeding seasons. Sex of the bird was determined through a combination of electrophoresis and morphometrics. While some birds dispersed along the Atlantic coast of the United States in a southerly direction following breeding, others remained within a few kilometers of their nesting site, or moved east into Canada. We suggest that this level of variation is of itself of interest, and risks being lost if too much emphasis is placed on generalized mean-centered pattern analysis.

Shifting shorebird dynamics at a critical stopover habitat in Washington State

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Abstract

Grays Harbor and Willapa Bay are outer-coastal estuaries in Washington recognized by the Western Hemisphere Shorebird Reserve Network as sites of Hemispheric and International importance, respectively, for migratory shorebirds. Long-term observations indicate a decline in wintering and northbound shorebirds in Grays Harbor, accompanied by an increase in abundance and apparent redistribution to Willapa Bay. The causes of this shift are unknown, and recent data for both estuaries are limited. To document current shorebird and raptor abundance, winter surveys were conducted in 2025 and spring surveys in 2026 at 39 land-based points across Grays Harbor and Willapa Bay. Surveys were conducted during 2.5–3.5 ft tides, with species composition and abundance recorded. Coordinated single-day counts documented 72,746 shorebirds in winter and 192,193 in spring, representing 27 shorebird and seven raptor species. In May 2026, boat-based surveys were also conducted at known high-tide roost sites in both estuaries. Overall, 74.5% of recorded shorebirds were observed in Willapa Bay. Ellen Sands Island in Willapa Bay was particularly important, with a single-day count of 192,767 shorebirds on April 29, 2026. This count alone exceeded historical estimates of seasonal shorebird abundance for Willapa Bay. These results highlight a substantial shift in the distribution and concentration of migratory shorebirds between the two estuaries. We compare current and historical abundance estimates and identify priorities for future research and monitoring.

Shared Tides, Competing Needs: Spatiotemporal Overlap and Behavioral Responses of Migratory Shorebirds to Coastal Harvesting Activity in Ormoc Bay Wetlands

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Abstract

Intertidal habitats support migratory shorebirds and coastal livelihoods, yet interactions between tidal dynamics, human resource use, and shorebird behavior remain poorly understood. This study examined these interactions in the Ormoc Bay Wetlands, a site within the East Asian-Australasian Flyway on Leyte Island, Philippines. Tidal regulation of habitat availability was quantified using Sentinel-2 imagery and harmonic tidal analysis across 27 scenes. Shorebird composition and activity patterns were documented through point counts and passive acoustic monitoring across 15 dates (October 2025–March 2026). Responses to disturbance were assessed via scan sampling and flight initiation distance surveys, while resource use was examined through interviews and participatory mapping with 45 harvesters. Exposed intertidal habitat declined nonlinearly with tide height, with only 20% of mapped area exposed at 0.342 m, compressing shorebird foraging into narrow windows. Bird assemblages varied across months, driven by migratory turnover. Acoustic detections peaked at intermediate tidal levels (0.4–0.6 m) and morning hours (09:30–12:30), shaped by a tide–time interaction. Human harvesting, dominated by gleaning, was extensive and concentrated within the same tidal windows used by shorebirds, shifting behavior from foraging to vigilance and reducing activity. Flight initiation distances varied by functional guild and increased with distance to cover. Socioeconomic findings revealed livelihood dependence on intertidal resources, limited diversification, and widespread food insecurity. Ormoc Bay's intertidal habitats function as coupled social-ecological systems in which tidal dynamics jointly shape ecological opportunity and human access, requiring conservation approaches that align ecological function with livelihood realities.

Student

Tracking Saltmarsh Willet (*Tringa semipalmata*) populations from Virginia, USA, throughout their annual life cycle

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Abstract

Eastern Willet (*Tringa semipalmata semipalmata*) is a relatively common yet understudied shorebird species that breeds in marshes and barrier islands along the Atlantic coastline of the United States, including coastal Virginia. The goal of our study is to evaluate the annual cycle structure of the Eastern Willet population that breeds along Virginia's Eastern Shore. During the 2023-2025 breeding seasons, we deployed Druid and Ornitella GPS transmitters on 77 nesting adult Willets. We obtained 39 southbound and 32 northbound migration tracks from 33 individuals. Analysis of these data streams is ongoing, but preliminary results provide insight into the timing of migration, migratory corridors, critical staging, breeding, and non-breeding territories, and site fidelity to these locations. Future findings from our study will provide foundational information to guide conservation and management strategies needed to protect this species throughout its annual life cycle.

Student

Disease detection in Pectoral Sandpiper (*Calidris melanotos*) from host genome sequencing

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Abstract

Avian malaria is a disease caused by haemosporidian (protozoan) pathogens. Host species that spend more time in wetlands and freshwater ecosystems, such as the Pectoral Sandpipers (*Calidris melanotos*), often have high incidence of malaria. As malaria detection often requires field, laboratory, and sequencing funding, my goal was to test blood-parasite detection from publicly available host DNA sequences. I used 20 whole-genome sequences of Pectoral Sandpipers to search mitochondrial genomic markers of the three haemosporidian genera: *Plasmodium* spp., *Haemoproteus* spp., and *Leucocytozoon* spp. I downloaded host 'SRA' Illumina paired-end reads from NCBI to my personal computer (PC) and extracted 'fastq' data using the 'SRA toolkit'. I split each 'fastq' into smaller 5-million-read pair files, increasing processing speed while reducing storage space. Using a library I created from 63 almost-complete mitochondrial sequences from parasites, I mapped host DNA and created parasite candidate sequences through 'bowtie2'. I nucleotide-matched candidate sequences in 'BLAST' to confirm whether they were smaller host sequences or belonged to parasites. None of the 2.1 billion read pairs and 58 candidate alignments supported haemosporidian detection. One candidate strongly matched *Pseudomonas aeruginosa* (99.2%) and one *Escherichia coli* (100%), bacteria that can cause respiratory disease in birds. I screened host genomes for disease detection using a basic PC and no funding, expanding the use of public data to provide important ecological and conservation information. My next goal is to develop a library for *P. aeruginosa* and *E. coli* detection in Pectoral Sandpipers.

Student

A quantitative assessment of ingested microplastic impact on gut microbiome in Double-crested Cormorant (*Nannopterum auritum*).

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Abstract

Microplastic pollution poses a significant threat to wildlife, with avian species particularly vulnerable to entanglement, physical injury, and accidental ingestion. While prior research has documented microplastic-associated disruptions to gut microbiomes, and immune function in birds, significant gaps remain. Our objectives are to define the gut microbiome of the Double-crested Cormorant (*Nannopterum auritum*) and document how different microplastic loads may disrupt this microbiome. We have examined Double-crested Cormorant gastrointestinal tracts collected by USDA/APHIS Wildlife Services cooperators in 2024–2025. Each bird's small intestinal tract is split into its anatomical sections: the duodenum, jejunum, and ileum. We swabbed each intestinal section along with the colon for next-generation DNA sequencing of microbial communities. Parasite assessments were also performed for each intestinal section. With these samples, we investigated the effects of ingested microplastics on gut microbial communities. Our data presents the microbiome of each intestinal section of the Double-crested Cormorant with and without microplastics observed. With this we hope to highlight how microplastics may affect symbiont ecosystems within a waterbird species.

Student

Effects of Salt Marsh Restoration on Saltmarsh Sparrow Populations in New York

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Abstract

Salt marshes along the Atlantic Coast face threats from sea-level rise, development, and invasive species, and tidal marsh birds have declined sharply as a result. Saltmarsh Sparrows (*Ammospiza caudacuta*) are salt marsh obligates, indicators of tidal marsh health, and projected to go extinct within the century if current trends continue. While some marshes have been restored, evaluations focus mainly on hydrology, sediment, and vegetation, leaving wildlife responses for at-risk species poorly understood. We assessed restoration effects on Saltmarsh Sparrow abundance and breeding success by comparing restored and unrestored marshes across New York State. From 2024–2026, we surveyed 45 points at 24 sites in New York City and Long Island, using a rapid assessment protocol consisting of two visits per breeding season. Each visit included a 12-minute point count and three hours of fixed-effort mist netting; during the final visit, we assessed vegetation within 50 meters of each point. We banded, aged, sexed, and measured each sparrow. Negative binomial linear mixed models tested the effects of restoration status, year, and site on unique captures, and the number of females and juveniles as a breeding-success indicator. Restoration status, site, and year had no significant effect on abundance or breeding success during the study. Sites that would be considered reference areas due to relatively intact and contiguous habitat yielded high numbers of females and juveniles, and some restored sites matched those numbers. Comparisons of captures before and after restoration in relation to controls are pending.

Student

Monitoring the marine ecosystem in the northeast: A look at seabird trends and highlights in a multi-year data set.

Allison Black

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Abstract

The Atlantic Marine Assessment Program for Protected Species (AMAPPS) is a comprehensive multi-agency research program in the U.S. Atlantic Ocean, from Maine to the Florida Keys, that began in 2010. Its aims are to assess the abundance, distribution, ecology, and behavior of marine mammals, sea turtles, and seabirds throughout the U.S. Atlantic. This information can then provide spatially explicit information in a format that can be used when making marine resource management decisions and will provide enhanced data to managers and other partners by addressing data gaps that are needed to support conservation initiatives mandated under the Marine Mammal Protection Act, Endangered Species Act, National Environmental Policy Act and Migratory Bird Treaty Act.

Flooding risk assessment for nests of imperiled shorebirds in South Texas

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Abstract

Wilson's Plover (*Anarhynchus wilsonia*) and Snowy Plover (*Anarhynchus nivosus*) have both experienced population declines across their range. Nest overwash from flooding events is a major cause of nest failure in plovers. Delineating nesting habitat with known risks of flooding would assist managers in identifying priority nesting areas for conservation actions. Yet, few models that are spatially and temporally explicit have been developed to assess the risk of flooding. We assessed the flooding risks of plover nests using ten years of coastal breeding bird survey data and the Tidal inundation Model of Shallow-water Availability (TiMSA) for Mustang Island and the northern Laguna Madre, Texas. We used water level dataloggers and drone-based Real Time Kinematic to validate our models. Preliminary results reveal temporal and spatial variation in flood risks, with the highest number of nest flooding occurring in May, and a greater frequency of nest overwash at particular sites. Over ten years, 40% of all plover nest failures in our study area were caused by flooding, and that percentage could increase over time with climate change. The results of this study will provide insight into plover nest site selection, inform management actions for breeding plovers on the Texas coast, and provide a methodology for assessing risk of nest site flooding in other regions.

Decrypting population impacts of catastrophic weather events and HPAI for Bald Eagles in Michigan amidst federal budget cuts and a pandemic

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Abstract

Michigan (USA) has monitored nesting Bald Eagles (*Haliaeetus leucophalus*) since 1961, first statewide (1961–2018) and later a subset of 350 breeding pair under the Great Lakes Restoration Initiative. The population recovered from 54 pair in 1962 to an estimated 1,085 in 2022. Annual aerial surveys (occupancy and productivity) have been flown since the early 1960s except 2020 and 2021 due to the Covid 19 pandemic. A limited set of nests were surveyed in 2025 and 2026 due to federal budgetary grant cuts. A subset of nests is climbed for banding 1965–present, except 2020–2022 due to the pandemic. The population suffered an additive mortality event (highly pathogenic avian influenza) in 2022 to 2023 that is estimated to have decreased the nesting population by over 400 pair. Recovery was not documented in 2024. In 2025 a three-day freezing rain event impacted over 1 million ha of forest in the northern lower peninsula severely damaging nest trees. In 2026, an extremely cold and long winter, coupled with heavy spring rain and flooding across most of the northern areas of the state occurred. These three events lowered productivity and numbers of nestlings. Methods for estimating impacts and assessing damage will be presented. The importance of long-term data sets to understand and document the impacts of climate effects and diseases is crucial to monitoring the health of the environment and eagle populations.

Linking Common Tern (*Sterna hirundo*) diet and mercury exposure using eDNA

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Abstract

Dietary exposure to mercury can have significant negative effects on the health of both human and wildlife populations, particularly wildlife that are higher-order consumers. Due to food web biomagnification, mercury exposure risk generally increases with increased consumption of fish, but varies based on specific diet composition. To elucidate spatial and temporal variation in dietary routes of mercury exposure, environmental DNA (eDNA) sequencing was used to document the species composition and relative abundance of prey items consumed by Common Terns (*Sterna hirundo*). In 2023 & 2025, we collected fecal & feather samples (n = 191) from 77 chicks hatched at a breeding colony in the St. Louis River Estuary (SLRE), Duluth, MN. We also collected samples at a breeding colony in Chequamegon Bay, Ashland, WI (n = 49 samples from 12 chicks). A minimum of three samples were concurrently collected from the same chicks from days 2 – 30 (at roughly weekly intervals), providing a longitudinal dataset from which to associate diet with mercury. We extracted DNA from fecal samples and sequenced a fish-specific barcoding gene to characterize prey composition and relative abundance. This allowed us to document potential shifts in prey composition and relative abundance at distinct foraging locations (inferred from carbon and nitrogen stable isotope data) and to identify the age at which tern chicks are most susceptible to Hg exposure.

Examining long-term changes in Wilson Plover nesting sites along the upper coast of Texas

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Abstract

Shorebird conservation efforts in Texas are uniquely challenging given the multitude of complex pressures threatening gulf-facing beaches. Characteristics such as erosion and vegetation loss or accretion, abundance of potential predators, and weather events, as well as human related impacts such as development and recreational use, can influence nesting site selection over a single or multiple successive breeding seasons. After the Deepwater Horizon oil spill, five avian conservation organizations united to document these threats and their impacts, with a mission to enhance recruitment and survival of the focal species and directly contribute to the recovery of losses. Each year, Wilson's Plover are monitored through twice weekly beach stewardship activities and multiple outreach events. As a result, an extensive database of nesting sites, productivity metrics, and band records has been established. Along the upper coast specifically, we evaluated where Wilson's Plover nests were found and how these locations changed yearly in response to shifts in beach conditions, including habitat availability, disturbance likelihood, and weather systems. We determined that individuals have greatly altered their nesting site locations between years in response to these documented changes, and annual productivity is often heavily influenced by localized weather events. As a result, some sites have concentrated these solitary nesters into a few suitable areas along expansive beaches. These findings highlight how imperative coastal conservation and restoration efforts are given the potential impacts of a single weather or disturbance event in these dynamic systems.

Spatiotemporal Patterns of Nest Predation in Piping Plovers: Implications for Exclosure Deployment

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Abstract

Current conservation and management of the piping plover (*Charadrius melodus*) focuses heavily on reducing adult mortality and nest loss due to predation. High-resolution predation event data are essential for predicting site-specific predation risk and guiding management decisions regarding exclosures and resource use. Applying spatial analysis tools to nest fate data allows for the detection of geographic clustering of predation events, complementing traditional temporal analysis. We evaluated nest fates and spatial data for piping plover nests at Smith Point County Park, NY, from 2015 to 2025 ($n = 365$) using ArcGIS Pro and R. Hotspot analysis (Getis-Ord G_i^*) evaluated spatial clustering of high and low nest predation for individual seasons and across a pooled 11-year dataset. 10 of 11 annual hotspot analyses detected significant spatial clustering of predation events with at least 90% confidence ($p < 0.10$). To complement exploratory GIS analysis, we fitted spatial generalized linear models using the `spmodel` package in R, comparing various spatial covariance structures and random effects against a baseline null model. The top-performing spatial model was used to construct a predictive probability surface of predation risk across the study area. Integrating spatial clustering analysis with predictive spatial modeling can provide land managers with a robust framework for assessing future predation risk and decisions regarding exclosure use.

Student

Microplastic Exposure in Freshwater Wading Birds: Pellet Analysis of the Great Blue Heron in the Upper Mississippi Watershed

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Abstract

Microplastics are an increasing concern due to their potential movement and accumulation throughout aquatic food webs. This study investigates microplastic contamination in freshwater wading birds, specifically Great Blue Heron (*Ardea herodias*) pellets collected from the Upper Mississippi watershed. As high-level predators that consume fish, amphibians, and aquatic invertebrates, Great Blue Herons may provide a non-invasive method for examining microplastic exposure within freshwater food webs. Eighteen pellet samples were collected in collaboration with the National Park Service in July 2026. Samples are being dried, homogenized, and digested using wet peroxide oxidation with ferrous sulfate and 30% hydrogen peroxide. Samples are currently being heated and stirred, with hydrogen peroxide additions every 12 hours to facilitate the breakdown of organic material. Following digestion, samples will be filtered and analyzed using Nile Red staining and fluorescence microscopy. Suspected microplastic particles will be photographed, counted, and measured using ImageJ. Microplastic abundance and particle characteristics will then be compared with prominent prey remains identified in each pellet to investigate potential relationships between microplastic exposure and diet. Laboratory processing is ongoing, with preliminary observations showing continued breakdown of organic material within the samples. This research will provide information on microplastic exposure in freshwater wading birds and contribute to understanding potential pathways of plastic movement through suburban aquatic food webs. The findings may also demonstrate the usefulness of bird pellets as a non-invasive tool for monitoring plastic contamination in freshwater ecosystems and help establish a baseline for future research on microplastic contamination in freshwater wildlife and their prey.

Student

Using Spatially Explicit Citizen Science Data to Assess the Population Trends of a Cryptic Waterbird

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Abstract

The Forster's Tern (*Sterna forsteri*) is an understudied North American waterbird with the core of its breeding range in interior wetlands of the Prairie Pothole Region, and additional breeding populations along the southern coasts of the United States. Understanding the factors impacting a wide-ranging species like the Forster's Tern can be difficult, but citizen science datasets such as eBird, alongside environmental predictors of population abundance, can provide spatially explicit trends and habitat associations. Here we analyze annual population trends derived from eBird alongside a spatially explicit proxy for wetland availability (the Standardized Precipitation-Evapotranspiration Index, SPEI), to understand how habitat change is impacting species trends across the entire breeding range. We hypothesized that annual SPEI would have a positive impact on Forster's Tern annual abundance, and that this pattern would be most evident in interior wetland-breeding populations, relative to coastal populations. We found that the species' breeding population declined by 5.31% per year (90% CI: -3.22, -7.45) from 2007 to 2021. A simple linear regression between population trends and spring SPEI trends from 2012 to 2022 was statistically significant ($R^2 = 0.07495$, $F(1,3269) = 265.9$, $p < 2.2e-16$) with SPEI trends positively predicting population trends, and we are currently analyzing region-specific associations to better understand how wetland availability impacts different breeding areas. Assessing range-wide, spatially explicit population trends and their links to environmental variation can help to provide insight into how different populations across the breeding range may require unique conservation solutions to effectively protect species.

Student

Protecting the Rufa Red Knot Across the South Carolina Coast

Carl Brzorad

Southern Environmental Law Center, Charleston, United States

Abstract

From 2020-2024, the Southern Environmental Law Center (SELC) litigated a series of Endangered Species Act cases that established landmark protections for the rufa red knot (*Calidris canutus rufa*) from biomedical horseshoe crab harvesting across the South Carolina coast. The red knot is an imperiled shorebird that makes a transpolar migration each spring from Patagonia to Arctic breeding grounds. Red knots make only a few stops along their journey - for a significant percentage of the population, one of those stops is the beaches of South Carolina, where knots must consume large numbers of horseshoe crab eggs to refuel, survive their journey, and reproduce in the Arctic. According to recent research, the vast majority of red knots that visit South Carolina fly directly to the Arctic, bypassing Delaware Bay. This underscores the significance of South Carolina beaches - and horseshoe crab populations - to the continued survival of the species.

In 2020, SELC filed the first of three federal cases that would reign in biomedical harvesting - first in Cape Romain and then across the South Carolina coast. This presentation will chronicle these cases and the strong protections for red knots that resulted.

Temporal and spatial variation in nest defense behavior in a colonially breeding seabird, the Great Black-backed Gull (*Larus marinus*)

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Abstract

The Great Black-backed Gull (*Larus marinus*) is a ground-nesting seabird likely to experience steep population declines in the next 50 years. As part of a long-term banding study, we are investigating Great Black-backed Gull nest defense behavior to discern how the species responds to potential threats during the incubation period. We conducted behavioral trials (n=423) on individually-banded gulls (n=132) from breeding pairs (n=84) distributed across the colony on Appledore Island, Maine (42.98°, -70.61°) to assess their defensive responses. Behavioral trials were conducted throughout incubation as follows: a researcher approached the nest and stood one meter from its edge for 30 seconds, the defensive response of the incubating gull was rated on a categorical scale, and the latency to return to normal activities was recorded. Subcolony type affected gulls' defense responses such that gulls nesting in the 'campus' type had lower response scores and shorter latencies than gulls nesting in the 'dense' type. Temporal components also affected defense responses. Response scores decreased as hatch date approached, and response scores and latencies both decreased with later calendar dates. Our findings suggest that gulls may expend more energy on nest defense in densely populated areas, early in incubation. Neighbors may be less of a predator buffer for this species than for other colonially nesting seabirds, urging further research on the ideal colony density for gulls. Recognizing these temporal and density-related drivers of behavior is critical as resource phenology shifts and populations decline.

Student

Effects of Environmental PFAS on Immune Function of Juvenile Brown Pelicans in the Cape Fear River

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Abstract

Per- and polyfluoroalkyl substances (PFAS) are a group of synthetic chemicals known to persist in the environment and bioaccumulate, largely due to the strong carbon-fluorine bonds within their chemical structure. These contaminants have raised concerns globally, as PFAS are widespread and resistant to environmental and metabolic degradation. Several studies have documented that exposure to PFAS can have implications for endocrine responses to stress and suppressed immune function. These physiological responses may subsequently affect several aspects of organismal life history and ecology such as reproductive success, offspring development, and ability to heal wounds or recover from disease. Altered life history characteristics in upper trophic level species can have implications for other species and/or ecosystem function.

Student

Early insights into nest site selection and reproductive success for American Oystercatcher breeding pairs on salt marsh islands in New Jersey

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Abstract

Salt marshes provide important nesting, foraging, and roosting habitat for a variety of shorebird species, including the American Oystercatcher (*Haematopus palliatus*), but these habitats are increasingly at risk to sea level rise, flooding, and damage from coastal storms. Due to challenges with comprehensively surveying and monitoring Atlantic coastal salt marshes, there is a paucity of data on the abundance, distribution, and success of American Oystercatcher pairs nesting in salt marsh habitats range-wide. During the 2026 nesting season, we located and monitored 107 nests from 65 breeding pairs of American Oystercatchers on 35 salt marsh islands throughout study areas in Cape May and Ocean County, New Jersey. Of these nests, 52% (n=56) occurred within natural marsh areas and 48% (n=51) occurred in marsh areas that were enhanced through placement of dredged materials. Overall hatch success was 26% and productivity was 0.23 chicks per pair for all nests monitored during this study but we observed differences in nest site characteristics, threats, and reproductive success between study areas and habitat types (natural or enhanced marsh). Results from this study can help guide future monitoring efforts and inform management plans that target breeding pairs nesting in salt marsh habitats.

Getting Your Gulls in a Row: the Impact of Human Presence on Aggressive Behaviors in Nesting Herring Gulls

A. Cox

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Abstract

Tinbergen (1953) proposed that, when prevented from following through on a behavioural drive, gulls exhibit “displacement activity” that may manifest as acts of aggression. Burger (1980) later found that herring gulls have a “unique territory” around their nests in which all intruders are subject to defensive behaviour.

This project collected behavioural data before, during, and after humans were present in Maine's Great Duck Island gull colony (where field studies involving daily researcher presence have been ongoing each summer since 1999) to determine whether or not human presence has an effect on aggressive behaviour between nesting herring gulls (*Larus smithsonianus*). Three aggressive behaviours were defined from observations and in consultation with Tinbergen (1953); chasing, dive-bombing, and scuffling. Each behaviour was then sub-divided into categories based on duration and recorded from a tower in repeating two minute increments before, during, and after researcher presence around seven nests. Results show that gulls were 5.4, 12.2, and 2.7 times more likely to display chasing, dive-bombing, and scuffling behaviours respectively while researchers were present.

This project finds that human presence significantly increases aggressive behaviour between nesting gulls. This is relevant to future studies that seek to understand gull behaviour, because it shows that researcher presence is a factor that alters the way they interact with one another.

Student

Annual survival of Black Terns (*Chlidonias niger*) breeding in Maine, USA, 2021-2026

Danielle D'Auria¹, Kevin Kardynal², Ann McKellar², Brittany Currier¹

¹Maine Department of Inland Fisheries and Wildlife, Bangor, United States. ²Environment and Climate Change Canada, Saskatoon, Canada

Abstract

The Black Tern (*Chlidonias niger*) is the rarest breeding tern in Maine, has been listed as State Endangered since 1997, and has experienced a 70% decline in nesting pairs since 2006. Understanding survival and site fidelity is essential for identifying possible limiting factors and informing conservation actions for this peripheral population of the species. We estimated apparent annual survival at the five known active breeding sites in Maine from 2021 to 2026 using mark-recapture data from individually marked adults and chicks. We evaluated variation in apparent survival among age classes, sites, and years. Model selection indicated the greatest support for the model with age-varying survival and constant recapture probability (AICc weight = 0.386). Apparent annual survival was substantially higher for adults (weighted = 0.737, 95% CI: 0.569–0.856) than for hatch-year birds (0.500, 95% CI: 0.350–0.650), with values on the high end but generally comparable to those from other populations in North America and Europe. Recapture and resight data indicate some pairs switch sites among and within years (through renesting attempts). Further analyses will examine nest site and mate fidelity to determine the degree of connectivity within this geographically isolated population. Continued long-term monitoring of marked individuals will be valuable for identifying demographic responses to changing environmental conditions and informing conservation strategies for breeding colonies.

Foraging Behavior of Wading Waterbirds in a Semi-Natural Environment

Nikolas Dahmen, Samuel Anderson, Fiona Carton, Justin Dobry, Kevin Healy, Adam Henderson, Ian Henderson, Elijah Hubler-Marti, Stephen Blake

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Abstract

In the last half century, waterbirds in the Midwest have declined by 80%, driven largely by habitat loss. Urban wetlands can provide waterbird habitat, although foraging success in restored habitats is seldom evaluated. As urbanization increases, understanding the habitats needed to maintain viable waterbird populations is important for adaptive management in urban green spaces. Forest Park, a 555-hectare urban park in St. Louis, contains a restored waterscape visited by at least 36 waterbird species and fifteen million people annually. We used focal animal sampling to quantify foraging success of four species of wading waterbirds (Great Blue Heron, Little Blue Heron, Great Egret, Green Heron) across the park, recording behavior, location, substrate, sky conditions, number of strikes, strike success, and prey taxa. We found fine-grained spatial structure in waterbird distribution by species, and considerable differences in selection of foraging microhabitats. We found a positive association between strike rate and prey capture rate, both of which differed by species. We found no impact of environmental variables on either strike rate or prey capture rate. The proportion of successful strikes also varied by species and was negatively impacted by increasing cloud cover. Fish comprised the majority (90%) of prey items, followed by amphibians (9%) and other prey (1%). Overall, we found no evidence of differences in foraging rates or prey selection in our urban study site compared to published records from rural waterscapes. Our data suggest urban waterscape restoration should expand and diversify wading habitats to enhance foraging opportunities for waterbird communities.

Student

Least Tern breeding dispersal is correlated with individual and colony-level reproductive outcomes

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Abstract

Many coastal habitat restoration projects have been initiated in the northern Gulf since 2011 with the goal of restoring beach-nesting bird populations. Accurate estimation of population sizes and response to restoration requires an understanding of regional movement given the highly mobile nature of many bird species. In this study, we used band resight data collected on Least Terns (*Sternula antillarum*) in coastal Mississippi from 2019 – 2025 to investigate factors hypothesized to affect within- and between-season breeding dispersal. We documented 200 renesting decisions from 96 individual terns during this time period. We used a hurdle model to estimate the effects of individual nest fate, colony productivity, colony size, and individual age on: 1) the decision to move to a new breeding colony (“switching probability”), and 2) dispersal distance given the decision to switch. Mean dispersal distance across individuals was 7.0 km (9.5 SD, range 0 – 40 km). Switching probability was greatest following nest depredation ($\beta = 11.3$, 2.8 – 21.5 95% Bayesian Credible Interval [BCI]) and was negatively correlated with colony productivity ($\beta = -0.7$, -1.2 – -0.3 BCI). Conversely, dispersal distance was positively correlated with colony productivity ($\beta = 0.2$, 0.0 – 0.5 BCI). Although individuals were more likely to switch colonies after reproductive failure, dispersal distances were generally small and were not correlated with nest fate. Small dispersal distances may result in individuals failing to escape the original threat in the homogenous landscape of Mississippi’s man-made beaches, which highlights the importance of managing threats at existing breeding sites in a habitat-limited landscape.

Population dynamics of Roseate Terns in the Northwest Atlantic: Building a foundation for assessing offshore wind energy impacts

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Abstract

Coastal ecosystems are undergoing rapid and irreversible transformations driven by climate change and anthropogenic development, including for clean energy alternatives such as offshore wind. Together, these pressures pose significant challenges for species that rely on coastal ecosystems, particularly colonial seabirds. The Northwest Atlantic population of Roseate Terns (*Sterna dougallii dougallii*; a federally endangered seabird) breeds in a small, interconnected network of colonies ranging from New York to Nova Scotia. We are conducting an integrated population model-Bayesian population viability analysis utilizing census, demographic, and movement data to estimate abundance, demographic rates, and probability of persistence under multiple management scenarios to evaluate risks from offshore wind energy development. There is a pressing need to estimate annual survival rates of juveniles and adults in this population given the development of offshore wind energy facilities in southern New England. Using resighting data of >15,000 banded birds, we estimated apparent annual survival rates from resights at multiple sites across their annual cycle. We will present a preliminary integrated population model analysis based on census and demographic data collected across the Northwest Atlantic tern population. Our analysis will be merged with movement data from throughout the region to estimate Roseate Tern exposure risk to offshore wind, which will inform our future population viability analysis scenarios. We anticipate that our results will improve understanding of Roseate Tern population dynamics and inform conservation planning to mediate potential future impacts of wind energy development in the region.

A Comparison of Common Survey Methods for Estimating Black-crowned Night Herons

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Abstract

Population estimates derived from monitoring efforts can be sensitive to the survey method selected, potentially leading to biased estimates and low precision relative to true population size. In this study we have produced population estimates of Black-crowned Night Herons (*Nycticorax nycticorax*) in a mixed-species colony in the Chesapeake Bay (Maryland, USA) derived from flush counts, diurnal, crepuscular, and nocturnal flight-line surveys, and in-colony nest counts. This poster will explore initial findings from this effort with particular emphasis on comparing the estimates across survey types along with the limitations and advantages of each approach.

Trace Elements Concentrations in Three Species of Piscivorous Birds within the Florida Bay Region

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Abstract

Trace elements (TE) have the potential to impact critical species in marine ecosystems. This study analyzes osprey (*Pandion haliaetus*, n=10), brown pelican (*Pelecanus occidentalis*, n=10), and double-crested cormorant (*Nannopterum auritum*, n=10) sourced as carcasses from wildlife rehabilitation centers in the Florida Bay region. Triplicate portions of brain, kidney, liver, and muscle will be dissected, homogenized and acid digested prior to inductively coupled plasma mass spectrometry (ICP-MS) for 15 TEs. These TEs includes lithium, an element rarely assessed for this type of study and that has potentially rising environmental prevalence with increasing use of rechargeable electric technology. Additional muscle samples of these birds and representative prey fishes were analyzed for $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ for trophic levels. It is hypothesized that trophic level will drive the species-specific concentrations. The results from this study are anticipated to allow for more targeted management action that mitigates harmful TEs and will provide valuable insights into ecosystem health.

Student

Behavioral factors influencing colonial nest site selection of the American Herring Gull

Will Draxler, John Anderson

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Abstract

American Herring Gulls (*Larus smithsonianus*) are colonial nesting seabirds known to nest in a wide variety of coastal conditions. Although much work has been done historically to understand the nesting behavior of this species, it is still unclear what conditions are predominantly responsible for nest site selection within a colony. Primarily considered factors include intraspecific interaction, substrate and vegetation makeup, and exposure to weather conditions. From 1999 to 2026, annual nest counts were conducted during the egg laying period in an *L. smithsonianus* colony on Great Duck Island, ME. Counts recorded the number of eggs in each nest, as well as an exact GNSS nest position using a Trimble GeoXH 6000 (accurate to approximately 0.5m). During the sampling period, the mean number of nests recorded annually was 508 +/- 245. Weather data is sourced from an oceanic weather buoy, approximately 11km from the study site. From 2001 to 2026, mean wind bearing was 188.3° +/- 96.6°. Using these records, assuming consistency between individual nesting and laying rate, and compensating for variation in date of count, it is possible to estimate the order in which nests are established and laid. This analysis will quantify the variation in spatial order of nest establishment across years, the relationship between establishment order and exposure to mean annual prevailing winds, and difference in site density between exposed and sheltered regions of the colony.

Student

Small-Scale Automated Radio Telemetry and Habitat Selection of Eastern Whip-poor-will in the Northeast United States

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¹American Bird Conservancy, Haverhill, United States. ²University of Massachusetts, Amherst, United States. ³Massachusetts Division of Fisheries and Wildlife, Westborough, United States. ⁴Antioch University, Keene, United States

Abstract

(M.S. Thesis results) Like many waterbirds, the Eastern Whip-poor-will (*Antrostomus vociferus*; EWPW) has experienced drastic population declines throughout its Northeast range and has lost approximately half of its population since the 1970s. This project used a Cellular Tracking Technologies automated radio telemetry system to track birds through trilateration in managed habitat during the breeding season in the Northeast United States. Birds were tagged with radio transmitters at a Wildlife Management Area, where a grid of 80 automated telemetry receivers was deployed. Receivers were installed on conduit poles, 8 meters from the ground in a 200-meter grid, across a study area of 4 square kilometers. We used three or more receiver detections of tag signal strength per pulse to triangulate nearly 500,000 locations across 13 male individuals and two breeding seasons (2022-23). Locations from the telemetry system are used to quantify home range size and describe this species' diurnal and nocturnal habitat selection during the nesting periods. Habitat information was collected through GIS layers and vegetation data was collected in association with each node location. These data enable an evaluation of how specific management actions at the site impact nesting birds. Field and analytical methods are well suited to waterbird science and considerations of small-scale automated radio telemetry systems will be discussed.

Student

Cost of Flight in Arctic Terns (*Sterna paradisaea*) using Different Methods

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³University of Groningen, Groningen, Netherlands

Abstract

Arctic Terns have the longest migration route in the Animal Kingdom, breeding in the Arctic and wintering in the Antarctic. While developing daily energy expenditures (DEE) in terns breeding in Kongsfjorden, Svalbard, we realized we could estimate cost of flight using cameras at the nests of incubating birds that had been injected with stable isotopes. When Arctic Terns are not on their nests, they are in flight. Using four birds with complete camera records, we calculated cost of flight by extrapolating chemical power against time away from the nest and found $6.58 \times \text{BMR}$. When we put energetics data from the same four birds through an equation provided by Ballance (1995) for estimating cost of flight in Red-footed Boobies (*Sula sula*), we got a value of $6.11 \times \text{BMR}$. But these four birds were thermally challenged and we estimated resting metabolic rate to be $1.5 \times \text{BMR}$. We also measured the flight morphometrics for 22 Arctic Terns in Kongsfjorden and fed them into a program that calculated cost of flight based on aerodynamic modelling. That resulted in an estimate of $4.32 \times \text{BMR}$, much more in line with the value reported for Sooty Terns (*Onychoprion fuscatus*), the only other member of this group for which there are flight data. Our 22 terns yielded a wing-loading value of 23.60 N/m^2 (0.24 g/cm^2) and an aspect ratio of 12.95 suggesting flight in Arctic Terns is very efficient.

It's a Gull's World: What long-term banding can teach us about an underappreciated species

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Abstract

In the public eye, “seagulls” are most commonly seen as thieving nuisances or dirty pests with booming populations. This perception is far too narrow, sometimes leading to active harm. Since 2004, the Gulls of Appledore Research Group has been banding and monitoring the colony of Great Black-backed (*Larus marinus*) and Herring Gulls (*L. smithsonianus*) on Appledore Island, ME. Despite popular assumption, research into Great Black-backed Gulls in particular remains limited, especially as their population has declined by an estimated 69% since 1985. Furthering our understanding of these species’ demography through band resights across the country, the Gulls of Appledore research group continually conduct a variety of projects investigating disease transmission, foraging ecology, physiology, and population dynamics. Each of these studies rely heavily on previously-and newly-banded adult and fledgeling birds annually. This presentation will provide examples of the impacts of long-term banding efforts to shift the narrative on these fascinating yet underappreciated species. We will review a collection of research on nesting and territorial behavior, population fluctuations, ongoing and historical work on foraging habits, and continuing studies of the effect of avian influenza on this population. By sharing the past and contemporary research conducted by the Gulls of Appledore project, we hope to shed light on how this population can inspire both researchers and research alike.

Coupling inundation modeling with bird observation data to estimate future climate-mediated habitat loss for federally listed roseate terns (*Sterna dougallii dougallii*) in the Caribbean region

Jessica Espinosa¹, Rafael Revorêdo^{2,3}, Keenan Yakola⁴, Autumn-Lynn Harrison⁵

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Abstract

Sea level rise is expected to dramatically alter coastal habitats worldwide, especially in the Caribbean, which currently experiences rates 60% higher than the global average. Given predicted habitat loss, coastal species are at risk of dramatic population declines. As a federally listed, migratory seabird, the roseate tern (*Sterna dougallii dougallii*) is at risk throughout its range and full annual life cycle. The Caribbean region not only provides nesting habitat for the threatened southern population of the subspecies, but it also provides important stopover habitat for the endangered northern population during migration. However, rising sea levels threaten sites used by both populations, as known breeding grounds and other areas of importance are predicted to experience wide-scale habitat loss. Given this risk, we coupled a novel approach to inundation modeling that allows for sub-regional comparisons, while also preserving local tidal dynamics, with nesting, tracking, abundance, and location data to examine likelihood of habitat loss in the Caribbean over time. We provided outputs through 2100, in reference to 2020, under several climate scenarios based on estimates for the Caribbean region from the IPCC AR6. Combining these inundation models with data on known nesting locations and abundances provided information on projected habitat loss at important breeding sites over time. We also compiled banding, tracking, resight, and historical specimen data to identify areas of importance by members of both populations. Knowledge of how sea level rise will affect these sites allows us to determine high-priority areas for future management of the subspecies in the Caribbean.

Post-breeding ecology of Roseate Terns on Nantucket, Tuckernuck, Muskeget, and Chappaquiddick Islands, Massachusetts

Shea Fee

The Trustees of Reservations, Tisbury, United States

Abstract

Upon its federal listing in 1987, the Northwest Atlantic population of the Roseate Tern (*Sterna dougallii*) became the focus of extensive research, largely centered on breeding ecology. While these efforts have contributed substantially to recovery actions at nesting sites, the post-breeding dispersal period remains poorly understood. The islands of Nantucket, Tuckernuck, Muskeget, and Chappaquiddick off the southern coast of Massachusetts have long been known to host large staging flocks of Roseate Terns however, systematic monitoring of these island sites has been limited. Over eight weeks from late July through mid-September 2026, we investigated multiple aspects of Roseate Tern staging ecology and behavior. Weekly, simultaneous assessments of staging flocks were conducted across all four islands to document species and age-class composition. Additionally, resighting of banded individuals was used to characterize local movements and identify colony of origin. Provisioning rates and diet were assessed by documenting the frequency and composition of prey delivered to staging flocks, supplemented by fecal sampling. These data provide a more comprehensive assessment of Roseate Tern use of these islands during the post-breeding period and will help clarify their importance as staging habitat. Better understanding how Roseate Terns use these islands and adjacent waters will provide critical information for informing conservation strategies for this federally endangered species.

The importance of a habitat matrix for a federally threatened shorebird: Red Knot movements within the Delaware Bay, New Jersey (USA) migratory stopover

Stephanie Feigin^{1,2}, Lawrence Niles¹, Theodore Diehl¹, Amanda Dey³, Joanna Burger⁴

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Abstract

Throughout migration, shorebirds depend on coastal stopover sites to refuel, yet a site's capacity to support them rests on its broader habitat system rather than just a /single food resource. Delaware Bay is one of the most important spring stopovers for rufa Red Knots (*Calidris canutus*) in the Western Atlantic Flyway, where birds feed on horseshoe crab (*Limulus polyphemus*) eggs before completing their Arctic migration. Using five years of individual Argos satellite telemetry (2021–2025; 104 birds; 3,358 quality-filtered fixes), we characterized within-stopover movement ecology and tested whether the bay functions as an integrated, multi-habitat system. Red Knots partitioned two spatially distinct habitats on a pronounced diel cycle. They concentrated along the northwestern Delaware Bay shore during daylight (>87% of birds from 05:00–18:00 EDT) and shifted to back bay lagoons behind southern New Jersey's barrier islands at night (83–100% from 22:00–02:00). Most individuals (63%) used both habitats, indicating that diel habitat switching, not individual specialization, was typical. Bearings from 472 movements by 56 birds revealed a predictable twice-daily commute: northwest toward the bay shore before dawn and southeast toward roosts in the evening. Bay shore use varied with tidal stage (95% of birds at rising and high tides versus 85% at low tide), whereas back bay roost use was tide-independent. These findings support an integrated three-resource model of Delaware Bay stopover function, bay shore foraging beaches, secondary back bay foraging habitat, and tide-independent roosts, and indicate that Red Knot recovery requires conserving the entire habitat system.

Habitat use and movements of Black Skimmers nesting within a key colony in New Jersey

Lisa Ferguson¹, Samantha Collins¹, Meghan Kolk¹, Christina Davis², Emily Heiser²

¹The Wetlands Institute, Stone Harbor, United States. ²NJ DEP Fish and Wildlife, Woodbine, United States

Abstract

The Black Skimmer (*Rynchops niger*) is listed as an endangered species in New Jersey due to historical population declines and a heavy concentration of breeding pairs into very few active colonies. Over the past decade, the statewide distribution of known active nesting sites has shifted from a combination of beach strand and marsh islands to all beach strand sites, where human disturbance is of greater concern. We initiated research efforts to better understand local movements of adults captured within a key colony in Stone Harbor, New Jersey. Using Lotek GPS PinPoint VHF transmitters, we tracked a total of 17 Black Skimmer adults (Female: 7, Male: 10) for an average of 54 days (range: 17-79 days) during the 2021-2024 breeding seasons (July-September). We explore foraging commutes and locations for this key colony in New Jersey.

Physiological Feedbacks of two Gull Species to Anthropogenic Food

Derek Fucich, Heather Lynch, Lesley Thorne

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Abstract

The constraints preventing species from exploiting anthropogenic food's benefits and the mechanisms that others employ to offset anthropogenic food's costs dramatically shape urban community composition. We investigate these constraints and costs using blood samples of a common urban exploiter, *Larus smithsonianus*, and *L. marinus*, a closely related urban avoider. Using point-of-care devices and an assortment of hematological tests, we developed a comprehensive metabolic panel of individuals representing either species spanning a gradient of anthropogenic resource-use as determined through GPS tracks and stable isotope analyses. Our preliminary results suggest that reliance on anthropogenic food is coupled with substantial changes to a range of metabolites including blood glucose, beta-hydroxybutyrate, uric acid, and hematocrit. Further analyses will assess the interplay between either species' biochemistry and epigenetics to search for mechanisms allowing either species to better cope with the metabolic impacts of anthropogenic food. By clarifying these mechanisms, this work will explore the determining factors underlying resilience in the face of urbanization.

Student

Avian species diversity in marshes along the Delaware Bay coast in Delaware, USA

Hailey Glasko, Wren Davis, Zach Nehila

Delaware Department of Natural Resources and Environmental Control, Division of Fish and Wildlife, Dover, United States

Abstract

Point count surveys are commonly used to monitor bird populations, as the data collected during these surveys can be used to estimate species diversity, richness, and evenness. In 2025 and 2026, we conducted point counts in marshes along the Delaware coast of Delaware Bay following the Saltmarsh Habitat and Avian Research Program (SHARP) survey protocol. Surveys were conducted between sunrise and 11:00 am at previously established survey points. Each point was surveyed twice during the breeding season with at least ten days between visits. Vegetation surveys following the SHARP point count vegetation survey protocol were completed during the second visit to each point. The survey points are in both high marsh and low marsh areas, and some points are close to upland edges. Point count survey data is grouped by site, then the species diversity is estimated for each site. The vegetation survey data is also grouped by site for analysis to determine the dominant vegetation community at each site. We then explore the relationship between marsh bird diversity and vegetation community.

Black Skimmer Foraging Ranges Reveal a Shift in the 2026 Coastal Foodscape

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Abstract

Movement can provide an indirect measure of how birds respond to variation in their environment, and changes in foraging range may reflect shifts in the spatial availability of food resources. We compared foraging distance from the breeding colony for Black Skimmers (*Rynchops niger*) nesting at Lido Beach, Long Island, New York, across four breeding seasons (2018, 2019, 2022, and 2026). We analyzed GPS data from 63 tagged adults, comprising 42,713 hourly-thinned locations, and compared weekly mean distances from the colony among years using permutation tests that randomized year labels among individuals while controlling for the composition of observations within fixed four-hour periods. The three earlier breeding seasons were indistinguishable from one another across all weeks ($P = 0.08\text{--}0.83$), establishing a baseline weekly foraging distance of 1.6–3.4 km. In contrast, foraging distances in 2026 departed substantially from this baseline (global $P < 0.001$), reaching a maximum weekly mean of 11.9 km which is 7.3 times greater. The magnitude of this shift was strongly associated with time of day: during 20:00–08:00, 2026 skimmers traveled five times farther from the colony than birds in previous years, whereas daytime foraging distances remained comparable among years ($P \geq 0.38$). These results indicate that the ecological change underlying the 2026 shift disproportionately affected nocturnal foraging, when Black Skimmers typically obtain much of their prey. Concurrent estuarine forage-fish and chick-provisioning surveys are being integrated with movement data to evaluate whether reduced or spatially redistributed prey availability explains the increased foraging distances observed in 2026.

Acoustic localization creates a detailed record of secretive marsh bird breeding behaviors

Brooke Goodman, Leonardo Viotti, Louis Freeland-Haynes, Benjamin Munkres, Davis Hinds, Justin Kitzes

University of Pittsburgh, Pittsburgh, United States

Abstract

Secretive marsh birds are facing steep declines, mainly attributed to loss of suitable wetland habitat. Reversing this trend requires detailed information on habitat associations within the breeding season. However, current survey methods such as in-person point counts, passive acoustic monitoring, and radio tagging fail to capture fine-scale habitat associations with behavioral context. Acoustic localization grids resolve these issues by passively generating months of fine-scale spatial records of vocalizations detected within a recorder array, and enable behavioral inference from call type. We applied this method to secretive marsh birds with a 200 x 200 meter localization grid in western Pennsylvania. We localized thousands of vocalizations, creating a detailed record of marsh bird movement within the array and documented the behavior of a mated Sora and Virginia Rail pair within the array. Different vocalization types exhibited distinct spatial patterns; the Sora "ooit" was tightly associated with a small territory in the array, while its "whinny" call was observed throughout the array. We also observed varying temporal patterns for different vocalization types. "Ooit" and "tick-it" (Virginia Rail) calls composed 79% and 98% of detections for each species, respectively, both peaking in early May. Virginia Rail "grunt" and Sora "whinny" composed the rest of the detections, and remained stable throughout the month. Acoustic localization allowed us to uncover fine-scale details of marsh bird movement throughout the season and observe behavioral patterns previously undescribed in their

A Quantitative Assessment of Risk to Seabirds and Migratory Landbirds from Energy Development in the Gulf

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Abstract

Offshore energy development poses risk to birds due to collision mortality, habitat alteration and loss, and behavior change. In this study, we evaluated risk to seabirds and migratory birds using published data to determine spatially explicit exposure risk to energy development within the Gulf of Mexico. For seabirds, we used published habitat suitability and abundance models to determine exposure, then weighed each species' exposure risk by population, displacement, and collision vulnerability assessments to assess overall risk across the Gulf. Risk to seabirds from energy development was found to be higher in the central Gulf, particularly adjacent to the coasts of Mississippi and Louisiana. For migratory birds, we conducted a literature review and compiled incidental observations from pelagic boat surveys (e.g., GOMMAPPS) to assess potential offshore exposure then linked those scores back to the vulnerability assessment. Landbirds generally showed greater risk from energy development in the central and western Gulf. The importance of spatial decision context was evaluated specifically for Brown Pelican and Northern Gannet as a case study, by comparing risk assessments in both federal and state waters across the northern Gulf. Our results were influenced substantially by the spatial scale of analysis. Risk scores for wind energy areas within federal waters differed depending on whether state waters were included or excluded. As a next step, we are integrating data on nesting colonies and movement patterns to identify important foraging habitat for colonial breeding birds in the Gulf and are incorporating this new information into our risk assessment framework.

Effects of GPS tag attachment on provisioning behavior and productivity of Roseate Terns (*Sterna dougallii*)

Grace Guo¹, Donald Lyons², Keenan Yakola², Gemma Clucas¹, Peter Paton³, Juliet Lamb⁴, Joan Walsh⁵, Margaret Rubega⁶, Elizabeth Craig⁷

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Abstract

During the 2023 to 2026 breeding seasons, we deployed GPS tags (Pathtack nano- and picoFix GEO+RF) with leg-loop harness attachments (~3g including stretch magic harness material) on Roseate Terns (*Sterna dougallii*; N=89) at breeding colonies in New York, New Hampshire, and Maine. We assessed potential short-term tag effects by comparing nest productivity and provisioning behavior at the nest- and individual-level between tagged terns, their unhandled mates, and unhandled terns in the monitored populations. In New Hampshire in 2024 and 2026, we also compared provisioning effort between tagged and handled control birds. For data from years 2023 to 2025, we found no consistent differences in provisioning rates (prey deliveries per hour) at the nest level, but there appeared to be lower rates for tagged birds compared to their unhandled mates, suggesting mates may compensate for lower provisioning rates in tagged birds. Productivity rates (chicks fledged per nest) did not differ between tagged and control nests, with a few exceptions specific to site and year. Ongoing work includes analysis of 2026 provisioning behavior and resight rates of tagged, control, and unhandled birds at breeding colonies and adjacent stop-over locations in the region.

Student

Shared Beaches, Contrasting Spatial Dynamics: Interannual Nesting Distribution of Shorebirds and Seabirds on an Urban Barrier Peninsula

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¹Conservation of Endangered Species, Staten island, United States. ²Universidad de Guadalajara, Guadalajara, Mexico

Abstract

Barrier beaches provide shared nesting landscapes for shorebirds and seabirds, but these groups may differ in the spatial breadth and interannual consistency of their nesting distributions. We compared 260 nests recorded during the 2025 and 2026 breeding seasons across four sectors of the Rockaway Peninsula, New York City. We quantified proportional nest allocation among sectors, spatial breadth as the number of occupied sectors, and total variation distance between years. Shorebird nests occurred in all four sectors in both years, whereas seabird nests occurred only in the managed urban beach and ocean-facing sectors. Shorebird allocation shifted

Topography and Shoreline Position Are Associated with Hurricane Flood Exposure of Beach-Nesting Birds on an Urban Barrier Island

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Abstract

Beach- and marine-nesting birds are increasingly exposed to coastal flooding as sea-level rise and extreme storms alter nesting habitat. We evaluated associations between local topography, shoreline position, and Hurricane Erin flood exposure at two sectors of the Rockaway Peninsula, New York City: Beach 37th–56th St. and Breezy Point Oceanside. During 15 weekly surveys from late April to early August 2025, nest locations were recorded and characterized by local beach slope and minimum distance to the high-tide line. Moran's I with permutation tests evaluated spatial autocorrelation across 50–200 m neighborhood thresholds. Hurricane exposure was determined by overlaying nest locations with the observed flood extent. Exposed and unexposed locations at Beach 37th–56th St. were compared using Mann–Whitney U tests and rank-biserial effect sizes. Shoreline distance showed consistent positive spatial autocorrelation at Beach 37th–56th St., but none was detected at Ocean Side. Local beach slope was positively spatially autocorrelated at both sites across all thresholds. Hurricane flooding encompassed 11 of 65 nest locations (16.9%) at Beach 37th–56th St. and all 32 locations (100%) at Ocean Side. Within Beach 37th–56th St., exposed locations occurred closer to the high-tide line than unexposed locations (median: 28.5 vs. 81.5m; $p < 0.001$; $|r_{rb}| = 1.00$), with no overlap in observed shoreline distances. Local slope also differed (1.23° vs. 3.29° ; $p = 0.032$; $|r_{rb}| = 0.394$), although with greater overlap. These results indicate that storm-flood exposure was strongly associated with shoreline position, highlighting fine-scale physical habitat variation as an important consideration for coastal nesting-bird management.

Integrating Socio-cultural Values of Coastal Texans into Rookery Island Restoration

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Abstract

Waterbird populations along the Texas coast are in decline due to the loss of suitable nesting habitats, known as rookery islands. These islands exist in dynamic environments and near human activity, with many people utilizing these islands for a variety of recreational purposes. Species of waterbirds exhibit different levels of habituation to human activity, with some species more likely to experience nest failure and abandonment than others in response to disturbance events. Community values can heavily influence how people interact with the natural environments around them. The goal of this study is to enhance the planning of rookery island restoration by incorporating the social, cultural, and economic values of waterbirds and waterbird habitats. Through a value-based survey, the value systems of coastal Texans will be identified, in relation to nature and wildlife. The data gathered in this study will be integrated into a decision-support tool that restoration managers can use to prioritize locations that will achieve the greatest benefit for both birds and the community. From preliminary results, most survey respondents have indicated a high value and appreciation for waterbirds and their habitats, with very few indicating they use rookery islands. Even those who participate in consumptive activities, such as hunting and fishing, show great appreciation for the environment and would like to see more conservation efforts. For natural resource managers in Texas, the results from the survey indicate a high level of support for restoration of rookery islands to continue and expand.

Student

35 years of waterbird counts at Whitefish Point Bird Observatory, what can we learn?

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Abstract

Located on the south shore of Lake Superior in Michigan, waterbirds are funneled by the Whitefish Point during their seasonal migrations. Since 1985, Whitefish Point Bird Observatory has conducted biannual migration counts of these migratory birds. Standardized seasonal waterbird counts began in 1991. The spring count occurs annually April 15-May 31 with an average of 7,144 (+/- 2230) individuals/100 hours of observation time of 139 taxa (106 species) while the fall count occurs Aug 15-Nov 15 and averages 12,390 (+/- 1949) individuals/100 hours of observation of 149 taxa (109 species). Several species make significant migratory movements through the area in spring and fall; the annual trends for those species are presented here. With 35 years of data, what questions can we address about waterbird populations?

Uncovering temporal patterns of successful reproduction in Virginia Rail (*Rallus limicola*) using an automated acoustic classifier.

Davis Hinds, Brooke Goodman, Grace Keywork, Justin Kitzes

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Abstract

Marshbird populations worldwide are declining rapidly due to climate change and habitat loss. To counteract these declines, we must identify the habitat characteristics that best predict successful reproduction for marshbirds. While current monitoring practices can detect adult presence, they often fail to assess juvenile presence, which can better indicate habitat quality. Here, we develop an automated acoustic classifier to detect the begging calls of juvenile Virginia Rails (*Rallus limicola*) to improve demographic resolution of passive acoustic recording data. We deployed Song Meter Micro 2 recorders (Wildlife Acoustics Inc.) at six sites in Wingfield Pines, Pennsylvania, from June 2026 to August 2026. Using labeled begging calls available on Cornell's Macaulay Library and focal recordings recorded in June, we trained a shallow classifier utilizing the pre-established Perch2 machine learning framework. After applying the shallow classifier to 1290 hours of recordings and verifying positives using human annotation, we detected 44 positive clips over 10 days, with the highest number of positive detections on a single day being 16 clips. While most positive detections were observed during August, we also observed two positive begging call detections in June, potentially indicating the presence of two broods within the recording period. Our results suggest that passive acoustic monitoring supplemented with automated classifiers is a useful method for detecting begging juveniles, and that long-term acoustic monitoring can successfully capture more than just adult presence.

Recent Reproductive Deficits in Chesapeake Bay Ospreys

Chance Hines, Bryan Watts

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Abstract

Recent Reproductive Deficits in Chesapeake Bay Ospreys

During the decades following the DDT era, the Chesapeake Bay osprey population grew from 1,450 pairs to 8,000-10,000 in the 2020s. However, reproductive metrics from the past few years point to increasing food stress in much of the Bay. Mean productivity ranged from 0.9-1.6 young produced per nest between the 1970s and 1980s but declined to 0.75 in higher salinity sites by the mid-2000s. Recent monitoring suggests that this decline has accelerated sharply during the 2020s with polyhaline sites averaging fewer than 0.2 young fledged per pair in 2026. In contrast, osprey in tidal freshwater areas continue to produce about 1.0 young per pair.

Nest-Site Distribution and Behavior During the Chick-Rearing Period of Great Black-backed Gulls

Naoma Huta

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Abstract

Great Black-backed Gulls (*Larus marinus*) are the world's largest gull species, somewhat infamous for their aggressive interspecific interactions, yet they often nest alongside other gull species. I studied a mixed-species nesting colony of Great Black-backed Gulls and American Herring Gulls (*Larus smithsonianus*) on Great Duck Island, Maine (44°09'N, 68°15'W), a 91-ha island lying about 15 km offshore. Breeding pairs were enumerated by direct nest counts, and nest sites were mapped using a Trimble GPS unit (model 88951). Nest-site activities were observed during the chick-rearing periods and characterized from atop a 13-m lighthouse tower. I quantified parent activity, location, and approximate distance from the nesting site. Conspecific and interspecific clustering of nest sites will be quantified and presented at the conference. Complete analyses of nest-site activities and interspecific interactions will be presented at the conference.

Student

Predation – An Ongoing Challenge for Common Terns on Poplar Island, Chesapeake Bay, Maryland

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Abstract

The Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island (hereafter, Poplar Island), is a restoration effort in the Chesapeake Bay that uses dredged material from the shipping channels leading to the Port of Baltimore to rebuild and restore remote island habitat. These restoration efforts led to the establishment of breeding populations from a wide range of species including waterbirds such as cormorants, gulls, long-legged waders, rails, and terns. In fact, Poplar Island represents the largest breeding site for Common Terns in the Maryland portion of the Chesapeake Bay. However, since 2023 our research team has observed a dramatic decline in reproductive success on-site, driven in large part by predation from a suite of predators including Black-crowned Night Herons, Herring Gulls, and Short-eared Owls. This poster will detail our ongoing predator control and deterrent efforts, and potentially foster an exchange of ideas with other colony managers.

Two Seabirds, Two Trajectories: Black Skimmers, Least Terns, and a Changing Nesting Landscape in Florida.

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Abstract

Understanding recovery of imperiled species requires evaluating population trends against demographic expectations and changes in habitat availability. We examined 2019–2025 population trajectories of two state-listed colonial seabirds breeding in Florida, the Black Skimmer (*Rynchops niger*) and Least Tern (*Sternula antillarum*). We projected theoretical population growth from demographic rates and compared predictions with statewide abundance estimates. Despite similar coastal breeding ecology and exposure to environmental pressures, the species showed contrasting trajectories. Abundance estimates generally aligned with demographic expectations: Black Skimmer abundance increased, whereas Least Tern abundance declined. We explored differences in nesting-habitat availability as one potential factor associated with these trajectories. More than half of Florida's Least Tern population relies on gravel rooftops, compared with <5% of Black Skimmers. Although Least Tern demographic parameters incorporated data from roof-nesting birds, our models did not explicitly account for changes in habitat availability. Gravel rooftops are progressively disappearing as roofing systems are replaced by materials unsuitable for nesting seabirds, and long-term surveys show substantial declines in roof-nesting Least Tern colonies across Florida. Ground-nesting Least Tern populations have increased moderately in several regions, but these increases have not offset rooftop losses. Thus, diminishing rooftop habitat may further constrain Least Tern recovery, although its contribution cannot be separated from other demographic and environmental processes. Integrating demographic projections, population monitoring, and habitat trends provides complementary evidence for evaluating progress toward conservation objectives.

Identifying data needed to estimate menhaden consumption by breeding brown pelicans

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Abstract

Throughout its range, the diet of the Eastern brown pelican is dominated by pelagic schooling fish, particularly Atlantic and Gulf menhaden. Menhaden are relatively abundant in nearshore and estuarine waters, are an important prey item for piscivores, and are commercially harvested. Recently, there has been debate over harvest targets of menhaden and how to effectively incorporate the foraging needs of predators into fisheries management. Energy intake via foraging provides fuel for physiological mechanisms and behavioral activities that influence survival, condition, reproductive success, and ultimately population trajectories. Effectively estimating foraging requirements of predators, however, requires a detailed understanding of when, where, and how energy is acquired. For breeding seabirds that operate as central-place foragers, this food must occur within a range of a colony that permits meal delivery rates that support adequate chick growth while also allowing parents to maintain their own body condition. To better understand how menhaden availability might affect pelican populations, we are developing a bioenergetic model for pelican colonies during chick-rearing. Here we review the components of the planned model, the data sets that we have acquired to support the model, and comparisons of the former parameters to estimates from allometric relationships. We provide detail on energetic requirements of chicks as one example of the comparison between field and modeled data. Ultimately, this model will provide a tool to estimate the energy requirements for this predator-prey relationship and can provide a template for other similar relationships.

Influence of lobstering activity on the foraging ecology of American Herring Gulls, *Larus smithsonianus* in Maine

Emelia Lakebrink, Autumn Pauly

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Abstract

Fishing vessels clouded by foraging gulls are an iconic sight along the Maine coast. Yet, minimal research has investigated the prominence of this behavior, or the humans who encounter these birds in their work. American Herring Gulls (*Larus smithsonianus*) commonly provision chicks with bait discards, which may provide a “cheap” yet important food subsidy to populations confronting fisheries collapse. As economic challenges (e.g., inflated bait prices) compound in nearby human communities, the quality and quantity of subsidies may be compromised. I investigated behavioral dynamics between gulls and fishermen during the 2026 breeding season at Great Duck Island (GDI), Maine (44°09'N 68°15'W). Vessels were observed opportunistically from the island's lighthouse tower for a total of 1901 minutes, while following gulls were counted continuously. Of the 11 vessels viewed for over an hour, all exhibited gulls in pursuit. However, ~27% of these vessels were not seen dumping bait. Local GPS-tagged gulls (n = 28) from GDI and nearby islands further elucidate this relationship. Previous analysis has classified ~17% of their habitat use as fishery-related. Additional results from behavioral surveys, GPS-tagging, and a preliminary questionnaire with fishermen will be presented at the meeting.

Student

Drivers of full annual cycles movements of Great Black-backed Gulls (*Larus marinus*) breeding in Southern New England

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Abstract

Great Black-backed Gulls (*Larus marinus*) are widespread but declining throughout most of their North American and European ranges. Yet in the southern portion of their North American range (i.e., from southern New England through the Carolinas), their breeding population has increased in recent decades, raising the question of what local enabling conditions might be contributing to their success. Despite the species' ubiquity, understanding of the role of individual, environmental, and anthropogenic factors in distribution and habitat use across the annual cycle remains relatively limited. From 2024-2026, we tracked 40 Great Black-backed Gulls breeding at two colonies in southern New England across their annual cycle using GPS transmitters. We found that both breeding-season habitat use and migratory behavior were heavily influenced by the activity of conspecifics. The population was partially migratory, with females and individuals from the larger breeding colony more likely to migrate from their breeding home ranges during the non-breeding season. Migrants traveled up to 850 km from their breeding colony, where they occupied winter sites from Maine to North Carolina. From December-March, foraging activity shifted from nearshore coastal habitats (~15-20 km offshore) utilized during the breeding and post-breeding periods to offshore marine habitats by the shelf break as far as ~200 km offshore. These offshore trips appeared to be closely associated with fishing vessel activity. Our results improve understanding of their migration strategies, offshore distribution, and year-round resource use of Great Black-backed Gulls in an increasingly important region of the species' range.

Influence of Water Levels on Nest Survival of Black Skimmers and Caspian Terns on Texas Colony Islands

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Abstract

Nest inundation is a leading cause of nest failure for many ground-nesting species, a risk further exacerbated by the rapid loss of bare nesting substrate due to erosion, subsidence, and sea-level rise. In Texas, the impacts of tidal fluctuations and storm events on nesting birds, including the state-listed Black Skimmer (*Rynchops niger*), have been documented, but there are no quantitative estimates of the influence of water levels on nest survival. Therefore, we used weekly aerial surveys to monitor 879 Black Skimmer and 537 Caspian Tern (*Hydroprogne caspia*) nests across nine Texas colony islands from 2023–2025 to estimate daily survival. We fit generalized linear mixed models to evaluate the relationship between daily nest survival and maximum water level between nest observations. Nest density of all species (nests/m²), island area (m²), proportion of bare habitat, and number of days monitored were included as fixed effects and year and colony as random effects. Model selection indicated these factors were not important for predicting survival for Caspian Terns whereas Black Skimmer survival was best explained by proportion of bare habitat and an interaction between water level and nest monitoring period. Black Skimmer daily nest survival declined with increasing water levels, with stronger declines the longer a nest was observed ($\beta = -0.116$, 95% CI = -0.172 to -0.060). Survival also decreased with increased island area and proportion of bare substrate. The risk that elevated water levels pose to Black Skimmers supports targeted species management for rookery island design and restoration.

Student

Uncovering the hidden: offspring desertion and reneating in the Black-crowned Night Heron
Nycticorax nycticorax revealed by telemetry

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Abstract

Offspring desertion in biparental birds is a natural strategy maximizing lifetime reproductive success, yet it remains poorly understood in colonial herons due to their dense nesting habitats and elusive behavior. In Black-crowned Night-Herons *Nycticorax nycticorax*, prolonged parental care typically precludes double-brooding. Using GPS/GSM telemetry, we present the first evidence of uniparental offspring desertion in this species. In 2019–2020, we tagged 53 adults during early chick-rearing across seven colonies in southern Poland (including four fully tagged pairs). Telemetry revealed two desertion events followed by reneating (~4% of tracked adults): one by a male (from a fully tagged pair) and one by a female (from a single-tagged pair). Both individuals deserted when chicks reached approximately three weeks of age, relocating 1.3–2.6 km to secondary colonies to initiate a second clutch while their original partners maintained sole care of the primary broods. In two other fully tagged pairs, substantial inter-partner differences in care duration (7 and 14 days) suggested desertion without subsequent reneating. Among 15 birds experiencing complete brood loss, only one male reneated with a new mate; no other tracked individuals initiated a second brood. High regional colony density (>1,000 pairs across 10 colonies) and phenological asynchrony likely facilitate securing new mates. However, reduced canopy GPS accuracy, the tracking of single partners, and unmonitored older chicks mean our figures conservatively estimate actual desertion rates. Overall, uniparental desertion provides Black-crowned Night-Herons with a viable strategy for double-brooding.

Female offspring desertion in the Whiskered Tern *Chlidonias hybrida*: benefits, costs, hormones and sexual segregation

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Abstract

In biparental species, offspring desertion allows one parent to offload care costs onto its mate, though the drivers and sex-specific trade-offs remain debated. We investigated parental desertion in the Whiskered Tern, *Chlidonias hybrida*, in the Upper Vistula River Valley, Poland (~2,000 pairs breeding on fishpond complexes). Almost all females deserted their broods during weeks 1–5 post-hatching, occurring earlier in smaller broods, but never during incubation. Males responded by increasing provisioning rates, fully compensating in single-chick broods and partially in larger broods (2–3 chicks), maintaining post-fledging care for over a month without elevating chick mortality. Post-hatching, male stress responsiveness remained constant, whereas females exhibited a rapid, age-dependent downregulation of the prolactin stress response, independent of baseline variation. This physiological shift likely facilitates desertion, a strategy rendered viable by low predation pressure. Rare renesting indicates that earlier autumn migration is the primary benefit for deserting females. These divergent roles likely drive sexual segregation: females predominated at non-breeding areas during peak breeding, whereas males expanded across breeding and non-breeding sites post-breeding. Ultimately, male parental compensation provides the necessary context for female desertion to persist as an evolutionarily stable strategy, and while male fitness costs remain difficult to quantify, they appear tolerable given overall reproductive output.

Evaluating Regional Prey Communities And Stable Isotope Signatures For Lake Okeechobee Wading Birds

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Abstract

Anthropogenic modifications in the Greater Everglades Ecosystem have led to declining habitat quality and wildlife populations, including wading birds. Wading birds are food-limited predators that rely on aquatic fauna to support nesting efforts. They are sensitive to changes in hydrology and prey availability and thus are good indicators for Everglades restoration. Lake Okeechobee supports approximately 10% of South Florida's nesting wading birds, despite containing <2% of regional nesting habitat. Nesting birds will travel up to 30km to forage with flight distance correlated to lake stage, which influences overall foraging habitat availability. Although foraging habitat on the Lake is well studied, off-lake wetlands have never been systematically studied.

Preliminary results showed that wetland type has the strongest influence on aquatic fauna community assemblages in off-lake wetlands. Results also suggest that carbon and nitrogen signatures are influenced by wetland type and region and can be predicted with a moderate degree of confidence. Further analysis is necessary to fully understand variation in isotopic signatures and off-lake foraging habitat, which can inform landscape-scale management and restoration for the Everglades.

Student

Comparing Classifiers for Automated Acoustic Detection of Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) from Field Recordings

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Abstract

The Eastern Black Rail [BLRA] (*Laterallus jamaicensis jamaicensis*) faces range-wide declines driven largely by the loss of high marsh habitat. Traditional surveys yield few detections as the species is rare and occupies remote and densely vegetated habitats that are difficult to monitor at scale. Recent studies have used bioacoustics and automated classifiers such as BirdNET to characterize Black Rail habitat use, but none have compared multiple classifiers on the same dataset. Here, we compare BirdNET (v1.0) and HawkEars (v1.0.8) for identifying Black Rail “kee-kee-doo” calls. We deployed Cornell Swift autonomous recording units to record semicontinuously across 40 sites in the Edwin B. Forsythe National Wildlife Refuge (NJ, USA) from mid-March through July 2022. This deployment was supplemented by in-person surveys with playback at each point. After applying each classifier, human listeners verified the presence or absence of Black Rail calls among the highest-scoring clips. In-person surveys detected no Black Rails at any site, whereas both classifiers returned positive detections. BirdNET identified four positive sites (10%) while HawkEars identified 19 positive sites (48%). All detections occurred between 20:00 and 7:00 EDT and were sporadic, with any given site only yielding three positive days at most during the recording period. Building on these methods, we are currently exploring whether individual “kee-kee-doo” calls carry stable acoustic signatures enabling individual identification and abundance estimation. Enhancing bioacoustic methods for monitoring Black Rail will improve our ability to track population trends at large scales and inform conservation planning and habitat management for this species.

Student

Assessing seasonal patterns in the abundances of red knots and black-bellied plovers and their benthic and terrestrial prey on stabilized and unstabilized barrier islands in coastal Virginia to best guide management actions.

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Abstract

Wallops Island, Virginia, hosts NASA's Wallops Flight Facility, the Mid-Atlantic Regional Spaceport, and U.S. Navy operations and is an important migratory staging site for the rufa red knot (*Calidris canutus rufa*) and black-bellied plover (*Pluvialis squatarola*). Wallops Island implemented shoreline stabilization to protect this infrastructure in the face of climate-driven geomorphic change. We seek to understand the seasonal phenology of these birds and their prey to plan for ongoing management, and to understand how avian habitat selection is driven by seasonal prey variation. Twice monthly from 15 April – 15 October 2024-2026, we counted migratory shorebirds and took core samples to count benthic prey, and once monthly used sticky traps to count terrestrial prey, in the sandy ocean intertidal, peat bank, bayside mudflats, and interior pool habitats at random points across the study area. We conducted Bayesian mixed effects modeling to explore seasonal differences in bird and prey abundances and will use general additive models to explore phenological matching and overlap between birds and prey. We found that red knots were most abundant during Spring migration and rare in the Fall. Black-bellied plovers were more abundant in the Fall migration on sandy ocean intertidal habitats and more abundant in the Spring in bay, peat and pool habitats. Blue mussels (*Mytilus edulis*) were most abundant in early Spring and then declined dramatically. The availability of benthic worms, amphipods, and coquina clams (*Donax variabilis*) all peaked at different times. These data will guide the timing of both stabilization and shorebird conservation management actions.

Student

Ruddy Turnstone (*Arenaria Interpres*) Home Range Size and Composition During Migratory Stopover in the Delaware Bay

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³United States Geological Survey, Eastern Ecological Science Center at Patuxent Research Refuge Center, Laurel, United States

Abstract

Ruddy turnstone (*Arenaria interpres*) is one of the many shorebird species that depend on the Delaware Bay as their main refueling site during northward migration to breeding grounds in the Canadian Arctic. Behavior and habitat use within main foraging areas has been well studied through observational surveys. However, habitat requirements and composition have not been quantified throughout their stopover range. The Delaware Shorebird Project deployed Sunbird Solar Argos Transmitters (Lotek Wireless, Inc.) on ruddy turnstone during spring migration (2024 – 2026) and we are utilizing these tag data to investigate ruddy turnstone movements in the Delaware Bay. To date, tags have been deployed on 36 ruddy turnstones to aid in identifying roost habitat, daily movement patterns, and habitat selection. Here, we present home range summaries and the discovery of previously unknown roost sites. We include autocorrelated kernel density estimates with home range figures, overlap analysis, and analysis of land cover composition within core areas of use. We combine the C-CAP Regional Land Cover dataset and High Marsh Layer for high resolution habitat composition estimates (NOAA Office for Coastal Management 2026).

A network-based approach to prioritizing waterbird stopover sites along the Atlantic Flyway

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Abstract

Wetland stopover sites are crucial to supporting migratory waterbirds; however, they may differ in their importance due to a variety of factors including habitat quality, resource availability, and geographical location. Identifying and prioritizing stopover sites that contribute most to functional connectivity during migration is therefore essential for directing conservation efforts where they are expected to deliver the greatest benefit.

The study employs established network metrics to assess the relative importance of stopover sites along the Atlantic coasts of Canada and the United States for select species representing four major waterbird groups: shorebirds, seabirds, divers, and waterfowl. Each species is analysed independently, with breeding and non-breeding ranges excluded according to its distribution to construct species-specific migratory networks.

COMPARING GROUND-BASED AND DRONE-DERIVED NEST COUNTS OF WATERBIRD BREEDING COLONIES

Rostam Mirzadi, Dale Gawlik

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Abstract

Long-term monitoring programs for colonial waterbirds have traditionally used ground-based survey methods to estimate waterbird nest abundance. Recently, there has been an increase in the use of drone surveys to estimate waterbird nest abundance. Drone surveys have been shown to have higher accuracy than ground-based methods for some species and are safer for observers than are crewed aerial surveys. However, the precision of counts from both ground and drone methodology is reduced if estimates of bias are not considered. Therefore, we used Bayesian hierarchical modeling to estimate and adjust for bias in drone-derived counts associated with imperfect detection and species misidentification for 15 species of waterbirds. Nest counts were then compared between drone and ground surveys to estimate visibility bias of ground surveys and to calculate correction factors for comparing data between the two survey methods. Drone-derived nest counts had consistently low rates of bias from detection and species misidentification across all species. Ground surveys had lower detection rates and higher count bias than did drone surveys. Correction factors to be applied to data from ground-based nest surveys ranged from 0.53 (Roseate Spoonbill) to 2.32 (Great Egret), with most species underestimated using ground surveys relative to drone surveys. The correction factors produced in this study apply to the ground sampling distance and camera resolution used in our study. The results will allow for improved ground-based nest abundance estimates and the ability to incorporate visibility bias of drone-based methods into error estimates of nest counts.

Population-level effects of highly pathogenic avian influenza mass mortality events on Caspian Terns nesting in the Laurentian Great Lakes.

Trevor Thompson¹, Preeti Dave¹, Jim Quinn², Don Tyerman³, Chloe Paterson¹, Kevin Hynes⁴, **Dave Moore**⁵, Sadie O'Dell⁶, Anthony Signore⁷, Chip Weseloh⁸, Jolene Giacinti⁹, Cynthia Pekarik¹, Connie Adams¹⁰, Elizabeth Simons¹¹

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Abstract

The highly pathogenic avian influenza (HPAI) H5Nx virus panzootic has achieved near global distribution and impacted a wide range of species. Since the incursion of HPAI H5N1 into North America in 2021, mass mortality has been documented in several species and mortality continues, especially in seabirds and waterbirds. In May-June, 2025, mass mortality of Caspian Terns (*Hydroprogne caspia*; CATE) was documented at five annually-monitored breeding colonies on the Laurentian Great Lakes: Hamilton Harbour, ON (an estimated 89% loss of adults), Presqu'île Provincial Park, ON (-92%), Buffalo Harbor, NY (-80%), Little Galloo Island, NY (-26%) and Gravel Island, WI (-2%; low adult mortality here may reflect acquired immunity from a 2022 HPAI die-off in Lake Michigan). At all five colonies, CATE samples were confirmed positive for the H5N1 virus. An estimated 3,514 adults died at these locations in 2025. To assess impacts of this mass mortality at the population level, we compared pre-2025 estimates of colony size for all known colony locations on the Great Lakes, collected in 2018 in the USA (21 sites) and 2022-23 in Canada (17 sites), with the results of a follow-up survey in 2026. Pre-2025, there were an estimated 7,141 nests; post-2025, 2,966 nests were recorded, representing a region-wide decline of 58.5% (-75.8% in Canada; -51.2% in the U.S.A.). Combined, the 2022 and 2025 mass mortality events had a marked negative impact on the size and productivity of the Great Lakes population, which has restricted gene flow with other disjunct populations of CATEs in North America.

Thermal soaring in great black-backed gulls (*Larus marinus*) in the Northeast US

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Abstract

Large gulls, which rely on flapping flight to stay airborne, can opportunistically use energy from thermal updrafts for soaring flight. This behavior minimizes energy expenditure compared to flapping flight and allows birds to reach altitudes that greatly exceed typical flight heights. The great black-backed gull (*Larus marinus*), which is considered vulnerable to collision with wind turbines due to its flight height, is abundant in the Northeast US, where offshore wind development is ongoing. However, thermal soaring in this species is not well understood, particularly in offshore waters. Using GPS data from great black-backed gulls (n=19) collected between 2021-2024, we reconstructed three-dimensional (x,y,z) movements at 1-second intervals using a three-dimensional state-space model. We identified bouts of thermal soaring behavior using k-means clustering applied to flight heights and vertical and horizontal speeds. We used generalized additive mixed-effects models to determine the probability of soaring in relation to environmental variables. Of 19 individuals, 5 exhibited thermal soaring behavior, during which flight speed and flight height increased. Our models demonstrated that thermal soaring was most likely during low wind speeds, when the individual was offshore and thermal strength was high (i.e., water warmer than air ($p < 0.05$ and $p < 0.05$, respectively; deviance explained = 68%). During thermal soaring, time in the rotor height range of offshore wind turbines was greatly increased, with potential implications for collision risk. These results show that great black-backed gulls use environmental conditions for efficient flight and the importance of considering different flight behaviors when estimating collision risk.

Student

Steep declines of colonial wading birds in northeastern North America's largest breeding population: The next steps for conservation

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Abstract

Urban estuaries can support thriving ecosystems despite bustling human activity, and bird populations can serve as a key indicator of environmental health. The largest breeding population of colonial nesting wading birds (herons, egrets, ibises) in the northeastern United States is in New York-New Jersey Harbor, one of the world's largest urban centers. We use a long-term (22-year) complete nest census dataset, covering all breeding locations within the region to investigate trends in wading bird populations. We found that while the number of colonized islands has remained steady, the overall population has declined by 27%, faster than average declines across North American birds. Although populations of great egret (*Ardea alba*) and snowy egret (*Egretta thula*) increased, we found that black-crowned night heron (*Nycticorax nycticorax*) and glossy ibis (*Plegadis falcinellus*) declined by 55% and 59%, respectively, over the 22-year period and were driving overall population declines. We also found black-crowned night heron, historically the most abundant species, could be locally extirpated as soon as 2037. The loss of black-crowned night heron could signal a significant ecosystem shift with cascading consequences. We lay out the immediate action and investigation by researchers, resource managers, and policy makers needed to reverse these declines and to understand the implications for the health of this important urban estuary.

Differences in post-fledging ecology of Common and Roseate Terns from Great Gull Island

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Abstract

For seabirds, fledging success is often used as the metric of nest productivity and reproductive rate. Less is known about the post-fledging ecology of most avian species. However, this life-history stage is critical to understanding population persistence, since post-fledging parental care, staging behavior, and environmental conditions can impact juvenile survival rates and eventual recruitment. From 2024-2026, we monitored differences in post-fledging ecology of Common (*Sterna hirundo*) and Roseate tern (*S. dougalli*) juveniles and adults at Great Gull Island, NY. We monitored banded juveniles from 25 blinds on this 6.9 ha island. Although uncommon, Roseate Tern chick mortalities were detected within a week post-hatch, while Common Terns chick mortalities were documented from hatch through the post-fledging period. Based on detections of banded chicks, Roseate Tern juveniles departed 1-14 days post-fledgling, whereas Common Terns juveniles were more likely to emigrate 13 to 31 days post-fledging. Assuming post-fledged juveniles exhibited similar movement patterns to their parents, most adult Roseate Terns with satellite transmitters emigrated to coastal Massachusetts (Cape Cod and the islands), while tagged adult Common Terns were more likely to disperse to Narragansett Bay (RI) or Long Island Sound (NY/CT). Using movements of GPS- tagged adults as a surrogate, Roseate Tern juveniles presumably emigrated from Cape Cod to their non-breeding grounds in coastal Brazil, while Common Terns likely initiated their southbound migrations from Long Island to coastal North Carolina. Future work should focus on whether these differences in post-fledging ecology affect the population dynamics of these sympatric species.

Leg and foot damage rates in Leach's Storm-Petrel differ across two northwest Atlantic colonies

Jackson van Pelt

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Abstract

Leg and foot injuries have been previously noted in the Leach's Storm-Petrel (*Hydrobates leucorhous*) breeding in Canada, Europe, and the eastern United States. Hypotheses on the cause of these injuries range from disease or predation to damage from digging nesting burrows. Rates of leg-damage occurrence vary between breeding populations, suggesting that this damage may serve as an indicator of differing pressures in the birds' environments. This study analyzes and compares the patterns of leg and foot injury across two northwest Atlantic breeding colonies of Leach's Storm-Petrel – Great Duck Island, Maine, USA (44.152222, -68.248611), and Kent Island, New Brunswick, Canada (44.581944, -66.756111). Breeding birds were sampled as part of ongoing research on breeding biology. The rate of leg damage in adult birds breeding on Great Duck Island was significantly higher than those breeding on Kent Island. These results disagree with earlier research suggesting a northerly increase in rates of foot damage in Leach's Storm-Petrel. The nature of these injuries suggests predation at sea during the non-breeding season, however, further studies on the cause of these injuries are warranted. This study expands our understanding of patterns in foot and leg damage in small petrels and the pressures they may face.

Student

Impact of climate and land use change on Pacific flyway waterfowl harvest distribution

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Abstract

Despite declines in North American avian populations over the past 50 years, intensive and strategic efforts to conserve gamebirds and their habitats have been successful in maintaining healthy waterfowl populations. Population dynamics and distributions, however, may be subject to change under climatic and anthropogenic pressures. Research on waterfowl distributions in the Central and Mississippi flyways have found significant latitudinal and longitudinal shifts in several popular waterfowl species harvested from 1960-2019, with climate change and land use dynamics suspected as possible drivers. Using long-term band returns, the objectives of this study were to investigate possible shifts in waterfowl distributions within the Atlantic and Pacific flyways and to measure how much variation can be attributed to climate, land use change, or harvest pressure. Here we focused on two priority species, Mallards (*Anas platyrhynchos*) and Northern Pintails (*Anas acuta*), on the Pacific Flyway. Comparison between kernel density estimations of Mallards (1960s: n = 23,197; 2010s: n = 44,859) and Northern Pintails (1960s: n = 12,635; 2010s: n = 7,026) show extensive shifts in distribution centroids with Mallards shifting south ~527 km and Northern Pintails shifting north ~127 km. Additionally, preliminary results from these estimations as well as predictive models suggest these shifts are influenced by modern agriculture and wetland management. Results will provide valuable information towards informed decision making and wetlands conservation.

Student

An Overview of Current Research on the Exposure and Response of Waterbirds to Highly Pathogenic Avian Influenza

Diann Prosser

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Abstract

The incursion of clade 2.3.4.4b highly pathogenic avian influenza (HPAI) H5N1 into North America was followed by rapid and extensive spread of the virus. This has resulted in large-scale impacts to wild birds, with over 18,500 individuals from more than 170 species confirmed positive for HPAI H5N1 infection as of August 2026. Although infections are commonly reported in both ducks and geese, reports of mortality and morbidity have not been consistent across these species. Similarly, avian species that are not traditionally associated with influenza viruses have been widely and variably impacted by the outbreak. This presentation will provide contextual background and updates on the HPAI H5N1 outbreak in North America. Additionally, this presentation will explore several case studies of ongoing research on the exposure and impacts from this viral threat on waterbird species including cormorants, sea ducks, terns, and more. We will place special emphasis on interpreting management implications of this work and highlighting species-specific differences in HPAI host ecology.

Building resilient seabird networks: tracking tern dispersal for adaptive conservation planning

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Abstract

Quantifying regional movement pathways of sympatric seabirds is crucial for designing effective, network-scale conservation frameworks. To evaluate breeding and post-breeding movement of terns at Country Island National Wildlife Area, Nova Scotia, Canada, we deployed fine-scale GPS-GSM tracking devices on adult Common Terns (*Sterna hirundo*, $n = 5$). Although a sudden, colony-wide abandonment disrupted our localized seasonal tracking, this failure provided unique, unintended insights into regional dispersal patterns and metapopulation dynamics. Following abandonment, the tracked Common Terns redistributed to four distinct islands where they remained for the breeding season. Concomitant province-wide tern colony surveys incidentally revealed dispersal patterns of co-nesting endangered Roseate Terns (*Sterna dougallii*) that were detected at three colonies via resighting of uniquely coded leg bands originally added at Country Island. In total, we confirmed dispersal of five Common and seven Roseate Terns from Country Island to six different islands; five of which occur within provincial or federal protected areas. These findings offer rare empirical evidence of behavioral elasticity and high inter-colony connectivity within the regional metapopulation. Ultimately, our results underscore that safeguarding only a few core colonies is insufficient for long-term population persistence, particularly given shifting environmental and anthropogenic pressures across both marine and terrestrial landscapes. While Canadian tern management has recently focused on protecting high-fidelity core sites, building multi-site spatial safeguards into future conservation networks will be vital to sustaining these species.

Fine-scale foraging behavior of chick-provisioning Black Guillemots *Cepphus grylle* in Maine

Ezra Rowe, Emelia Lakebrink

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Abstract

Breeding Black Guillemots (*Cepphus grylle*) are coastal central-place foragers that, unlike other Atlantic alcids, typically provision two-chick broods with benthic prey. To characterize their space use, diving behavior, and colony attendance, we deployed miniature GPS loggers with integrated time-depth recorders on chick-provisioning birds at Great Duck Island, Maine (44°09'N, 68°15'W), near the species' southern range limit. Preliminary results from four birds suggest pronounced individual heterogeneity in space use and diving behavior, while multiple birds shared certain areas 17 km from the colony. Across 2,674 recorded dives, mean ($\pm$ SD) duration and maximum depth were 60.74 ± 26.49 sec and 11.05 ± 6.49 m, respectively, with the deepest reaching 43.07 m. Most foraging occurred during daylight hours, and colony attendance followed a marked diurnal rhythm. Complete analyses will be presented at the meeting.

Student

Exploring the Symbiome: Parasite and Microbial Communities in Semipalmated Sandpipers

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Abstract

The gastrointestinal tract of each shorebird represents an ecosystem containing distinct habitats with fluctuating nutritional resources, digestive chemicals, competitors, and natural enemies. Its inhabitants include metazoan and protozoan parasites, along with prokaryotic microbes. These organisms reflect the host's foraging and environmental interactions, providing insight into the ecology of the birds they inhabit. Interactions among these endosymbionts further shape their shared communities. Here, we evaluate components of the 'symbiome' of Semipalmated Sandpipers (*Calidris pusilla*) opportunistically collected following mortality at Delaware Bay, New Jersey, during the 2022–2026 field seasons. We performed quantitative necropsies on 21 birds and obtained metazoan parasite infracommunity data for every one. We also collected cloacal-fecal swabs from each bird for microbial community characterization using 16S rRNA gene amplicon sequencing on the Illumina MiSeq platform. Samples that successfully amplified yielded microbial assemblage data expressed as operational taxonomic units (OTUs). We compare parasite and microbial community composition, including associations between the abundance and occurrence of individual parasite taxa and microbial community components. We evaluate alpha diversity using Shannon and Simpson indices, beta diversity using Bray–Curtis and Jaccard dissimilarities, and taxonomic richness, including microbial richness at the family and order levels. These comparisons examine parasite and microbial communities separately and together. We also compare microbial assemblages from previously frozen birds with those from fresh fecal samples collected from the same species in 2025 and 2026 to assess differences associated with sample collection, postmortem conditions, and preservation.

Evaluating the scale and role of an apex terrestrial predator in high pathogenicity avian influenza transmission across the Falkland/Malvinas Islands

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Abstract

Pathogens of wildlife are increasingly recognized as major threats to biodiversity, ecosystem stability, and human health. The recent rapid spread of high pathogenicity avian influenza (HPAI), to new taxa and continents, exemplifies this threat. Hypotheses surrounding the incursion and persistence of HPAI in remote areas like the Subantarctic have largely centered on the movements of predatory and scavenging seabirds, which may act to connect otherwise disparate metapopulation units (i.e. prey colonies) through foraging trips. Our work describes the local, summer movements of one such scavenger in the Falkland/Malvinas Islands, the Chilean skua (*Stercorarius chilensis*), which has been implicated in the spread of various pathogens in other island systems. Using a hidden Markov model and Bayesian hierarchical regression fitted to GPS tracks from 25 animals captured both at and away from nesting sites, we assessed how key aspects of skua movements, particularly foraging behavior, varied across islands and life history stages. Data revealed constrained terrestrial movements, with the exception of a small number of animals from a single island that undertook long-distance marine foraging trips. We identified strong variability based on home island and on-nest versus off-nest capture. These constricted home ranges and potential life history differences stand in contrast to previous work describing the movements of skuas on other Subantarctic islands, which is limited and largely focuses on on-nest individuals. Specifically, our results suggest a need for redefining the potential range at which they might carry HPAI between seabird colonies while acknowledging and adapting to strong variability across contexts.

Student

Results of Eastern Black Rail surveys at E.B. Forsythe National Wildlife Refuges, 2021-2026

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Abstract

Eastern Black Rail conservation efforts are limited by severely deficient data on their abundance, distribution and seasonal occupancy of breeding, stopover and wintering areas. This continues to be the case in New Jersey where surveys in the last decade have revealed that black rail are present and widespread in its tidal wetlands, while the rate and consistency of detections remain very low. Here we report on results from six years of black rail surveys at E.B. Forsythe National Wildlife Refuge. The refuge spans more than 50 miles of New Jersey coastal back bays and encompasses more than 30,000 acres of salt marsh in Barnegat and Great Bays including 6,600 acres of unaltered salt marsh designated as Federal Wilderness. To date, the refuge has surveyed 10 of 23 of its salt marsh management units using ARUs and in-person surveys, with several units surveyed in multiple successive years. Four of ten marsh units are confirmed occupied by Eastern Black Rail, but very low detection rates at these sites suggest that the survey approaches used so far may not provide a reliable indication of black rail occurrence. Continued optimization of ARU deployment density, recording cycles and detection algorithms are needed before status and trend monitoring for black rail is operationalized at the refuge.

Spatial and temporal fluctuations of a mixed-species wading bird colony in the Atlantic Northeast

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Abstract

Numerous species of herons and egrets breed in abundance across the United States. Some have expanded to the northeast Atlantic coast, forming small dynamic populations. Appledore Island, Maine USA is home to a colony of 2-5 wading bird species (Great Egret [*Ardea alba*], Little Blue Heron [*Egretta carulea*], Snowy Egret [*E. thula*], Black-crowned Night Heron [*Nycticorax nycticorax*], and Glossy Ibis [*Plegadis falcinellus*]), some of whom are at the upper limit of their breeding ranges. Monitoring here occurred from 1974 until colony abandonment and then resumed when the colony re-established decades later. In this study, we investigate how population size, species composition, and location of the colony have varied over decades. Counts of nesting pairs between 1974 and 1994 were compiled from published studies and combined with our dataset of annual counts from 2021-2025 (totaling 15 survey years). Nesting pairs were estimated from adult counts or ground-based nest surveys. During the monitoring period, the colony occupied three sites across the island. Snowy Egret was the most numerous species in 12 of the 15 years surveyed. Recent counts indicate the colony is at its peak (362 total nests comprised of all 5 species). This is partially driven by Great Egret, which prior to 2021 did not breed on Appledore (except one pair in 1994). This study reveals the population dynamics of a mixed-species colony in the Atlantic Northeast. We further consider how local conditions and broader population trends drive observed changes in this small, dynamic population of wading birds.

Student

WITHDRAWN

Filling Knowledge Gaps for Migratory Shorebirds in the Caribbean: 15 Years of the Caribbean Waterbird Census

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³BirdsCaribbean, Port-of-Spain, Trinidad and Tobago. ⁴BirdsCaribbean, East Hartford, United States

Abstract

The Caribbean provides critical stopover and wintering habitat for migratory shorebirds along the Atlantic Flyway, yet major gaps remain in our knowledge of their distribution, abundance, and important sites across this diverse region. BirdsCaribbean launched the Caribbean Waterbird Census (CWC) in 2010 to address these gaps while building regional capacity for waterbird and wetland monitoring and conservation. Since then, hundreds of volunteers, researchers, NGOs, and government partners have participated in standardized counts at wetlands across the insular Caribbean, generating more than 21,000 CWC checklists. Shorebirds are widespread in these data, occurring on approximately 72% of CWC checklists, with reporting rates peaking during fall migration. Long-term monitoring is revealing wetlands that support exceptional numbers of shorebirds and documenting threats requiring conservation action. In Monte Cristi, Dominican Republic, surveys have recorded more than 17,000 shorebirds during a four-day fall survey, while also documenting illegal trapping and habitat degradation. At Bonaire's Cargill Salt Ponds, CWC monitoring documented more than 20,000 shorebirds annually, including internationally significant concentrations of Short-billed Dowitchers, Red Knots, and Snowy Plovers, contributing to designation of the site as a Western Hemisphere Shorebird Reserve Network site in 2018. These examples demonstrate how sustained, locally led monitoring can fill critical knowledge gaps, identify priority sites and threats, build conservation capacity, and catalyze conservation action. Expanding monitoring, particularly during migration, remains essential for understanding and conserving Caribbean shorebirds.

A LONG-TERM SYNTHESIS: Cumulative Ecological Studies of Non-Breeding Common Loons

PAUL SPITZER

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Abstract

Cumulative understandings of non-breeding CL ecology and behavior in marine and estuarine habitats form a scientific basis for explanation of the 1993 NC mortality event, and for future study (planned in 2027!) Atlantic Menhaden was a prime regional CL prey base, and its regional life history fits well with CL's abundance and distribution during my 1988-1996 study period, in Chesapeake Bay and coastal NC. The Menhaden YOY sudden decline, after 16 years of abundance, fits with the large CL NC emaciation mortality of spring 1993 (see Spitzer P.R. 1995. "Common Loon mortality in marine environments". Environmental Reviews 3:223-229. National Research Council of Canada). Future menhaden research should seek greater understanding of the fish's spatiotemporal distribution and seasonal ecology throughout the mid-Atlantic coastal region.

Endoparasite Communities of Laridae and Procellariidae Seabirds from South Florida

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Abstract

Seabirds opportunistically consume a diverse diet of offshore fishes, squids, crustaceans, and other invertebrates. Since these species feed across multiple trophic levels and travel across broad geographic regions, they may be exposed to a wide range of trophically transmitted parasite taxa. However, their endoparasite communities remain understudied, both at the host species level and across broader seabird assemblages. Furthermore, several species included in this study have received comparatively limited research attention, and few studies have characterized gastrointestinal parasite communities in members of families Procellariidae and Laridae. This study aims to characterize and compare gastrointestinal parasite communities among seabird families and examine how differences in ecology may influence parasite diversity and distribution. To date, a total of 26 individuals from four Procellariidae species and 227 individuals from 16 Laridae species have been dissected, with examinations of the esophagus, proventriculus, intestines, and cloaca. Parasite community composition differed between the predominantly offshore procellariid shearwaters and the more coastal larid gulls, terns, black skimmers, and noddies. Larids exhibited a higher proportion of digeneans, whereas procellariids harbored a greater proportion of cestodes and nematodes. These patterns likely reflect differences in host ecology and trophic interactions that influence exposure to intermediate hosts and parasite transmission pathways. Comparisons among host taxa provide insights into trophic linkages and parasite transmission dynamics within marine food webs.

Student

From Lab to Field: Developing and validating a method for genetic sex determination for Common Terns (*Sterna hirundo*) under field conditions

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Abstract

Common Terns breed in both freshwater and saltwater environments in North America, but inland populations are declining. Knowledge of sex of individuals would allow for more detailed insight into inland population dynamics. While this species illustrates size sexual dimorphism, individual variation shows size overlap making it difficult to accurately sex birds based on morphometrics. Terns have been sexed using genetic techniques in a laboratory setting for ~25 years, but samples are often collected in remote areas and rapid knowledge of sex is useful for immediate assistance in field studies or to eliminate the need to ship samples across international borders. We developed and tested a simplified and portable technique to enable sexing of common terns from blood samples in a non-laboratory setting. Blood samples were collected by femoral vein prick from breeding adults trapped on the nest at Oneida Lake, NY in 2026 and stored in lysis buffer. Using the Mini-PCR “Lab in a Box” coupled with MicroGem PrepGEM Universal single tube DNA extraction, we accurately sexed individual Common Terns. CHDa-F and CHDa-R primers were used to amplify an ~600-650 bp region of the Z chromosome present in both males and females and a ~400-450 bp region of the W chromosome present only in females. Samples were run a minimum of twice to ensure repeatability and compared to measurements of morphometrics made at time of sampling. Our sexing method required minimal additional laboratory technology and could be adapted to most standard field situations.

Student

Diet Composition of Nesting Great Egrets and Snowy Egrets at Lake Okeechobee, Florida.

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Florida Atlantic University, Boca Raton, United States

Abstract

Wading birds are indicators of wetland ecosystem health. Their diets can reflect prey availability and environmental conditions. Lake Okeechobee, located in South Florida, is a highly managed system surrounded by off-lake wetlands that provide potential foraging habitat for nesting wading birds. This study investigated differences in diet composition between the Great Egret (*Ardea alba*) and Snowy Egret (*Egretta thula*) nesting in anthropogenic colonies at Lake Okeechobee. Chick bolus samples were collected from three colonies in 2025: Rock Islands, Clewiston Spit, and Little Bear Beach. Chick bolus content was analyzed using PRIMER and RStudio to determine species- and colony-level differences in diet composition. Diet composition differs significantly between Great Egret and Snowy Egret ($p = .0001$). Great Egret bolus contained more crustaceans and invertebrates than the Snowy Egret bolus. A significant species x colony interaction ($p = .0027$) indicates that species-specific dietary differences varied among colonies. Great Egret boluses contained a mean of 86.3 prey items per bolus (SD = 86.23; range = 1-121), while Snowy Egret boluses contained a mean of 64.82 items per bolus (SD = 88.91; range = 24-161). These findings, which can help inform management practices, demonstrate species-specific and spatial variation in prey use among wading birds nesting in anthropogenic colonies at Lake Okeechobee. Future analyses will compare the bolus contents with prey availability data collected inside Lake Okeechobee and surrounding off-lake wetlands. Incorporating prey availability, lake hydrology, and species-specific foraging ecology will help determine whether observed dietary patterns reflect differences in prey selection.

Student

Highly pathogenic avian influenza H5N1 prevalence and seroprevalence in sympatric waterfowl and waterbirds, Sacramento NWR, California, USA

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Abstract

To assess infection and seroprevalence trends following the incursion of clade 2.3.4.4b highly pathogenic avian influenza (HPAI) H5N1, we leveraged ongoing capture efforts at the Sacramento National Wildlife Refuge Complex, California, USA between October 2022 and July 2025 to conduct sampling for HPAI prevalence and seroprevalence. Our efforts resulted in the analysis of 384 swab and 204 sera samples from assorted waterfowl and waterbird species. HPAI H5N1 infection was confirmed in only three individuals (two Snow Geese and one Greater White-fronted Goose), all asymptomatic at capture. Antibodies to influenza A viruses (IAVs) were detected in all duck and goose species with the majority of positive samples also testing positive for antibodies to both H5 and N1, demonstrating a relatively high population-level immunity that aligns with previous findings in these species. This study reports the first known observation of H5 antibodies in American Coot, though both overall IAV seroprevalence and H5 specific antibodies were notably lower than in sympatric waterfowl. This disparity suggests that American Coot may have lower susceptibility to infection or exhibit behavior that limits exposure compared to sympatric waterfowl. Together these results underscore the value of serologic surveillance as a supportive surveillance strategy to better inform potential management strategies related to HPAI H5N1 risk in wild birds.

Focused Predator Management for Least Terns in Delaware Shows Early Success

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Abstract

Least Terns (*Sternula antillarum*) have historically been found nesting on Delaware's oceanfront beaches with limited colonies found on Delaware Bay beaches. Least Terns have now been reduced to two breeding locations in Delaware, Fowler Beach at Prime Hook National Wildlife Refuge and The Point at Cape Henlopen State Park. Both locations institute closures to the public during the nesting season with symbolic fencing to reduce the impact of the public. In addition, Fowler Beach has installed electric predator fencing since 2019 to protect their colony. Despite these efforts, breeding population and productivity remain low, with predation believed to be the driving factor. 2026 saw the installation of six-foot welded wire fencing with a two-foot predator skirt installed at both colonies to limit the effects of Red Fox (*Vulpes vulpes*) predation.

Boaters and Plovers: Local community attitudes and social norms toward recovery efforts of a federally endangered shorebird at the edge of its range.

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Abstract

Piping Plovers (*Charadrius melodus*), extirpated since the 1950s in the Great Lakes region of New York, returned as annual nesters in 2015. In recent years, adult losses during the breeding season have led to a cessation of nesting, with only nonbreeding individuals present in 2025. While park staff have viewed public perceptions of recovery efforts as challenging, public attitudes and behaviors have not yet been studied. To address this gap, intercept and online surveys were conducted at Sandy Island Beach State Park and Lakeview Wildlife Management Area where plovers have frequently nested. The survey examined prior species knowledge, engagement with education, site usage, and social norms. Of 203 respondents, those with stronger injunctive and subjective norms had higher odds of supporting protective measures (beach closures, habitat restoration, and releasing captive-reared birds). Exposure to off-site outreach events and beach activities, along with participation in signage and social media, were each associated with greater support. However, support lowered when exposed to roving interpretation and social media. Passive exposure versus active participation in education may shape views of recovery efforts differently. Norm strength also predicted greater willingness to enforce protective behaviors, as did roving interpretation exposure, while participation in signage and social media was linked to decreased willingness. Site use type showed a mixed relationship with support: frequent visitation and motorized-boat access may predict lower support, while walking from a private trail, non-motorized watercraft, and infrequent visitation predicted the opposite. Residency status to a site showed no meaningful relationship.

Student

Royal Tern productivity and juvenile return rates during relocation efforts at an urban colony in Virginia

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Abstract

The South Island of the Hampton Roads Bridge-Tunnel (HRBT) is part of the Interstate-64 corridor which crosses the mouth of the James River between Norfolk and Hampton, Virginia. Royal Terns have nested on South Island since 2007, annually representing 80–90% of the state's breeding population. Expansion of the HRBT and I-64 corridor necessitated relocation of the colony to adjacent Rip Raps Island and marine barges in 2020. In preparation for the relocation, we marked a subset of the pre-fledging chicks using plastic field readable bands on South Island (2018–2019) and after the relocation on Rip Raps Island and the barges (2020–2026). To evaluate the effect of this relocation on the population, we estimated colony size and spatial distribution, reproductive success, and juvenile return rates from 2020–2026. Royal Tern colony size was relatively constant at 5,000–6,800 pairs per year, based on counts of nests and incubating adults. Colony productivity was more variable (range: 0.17–0.92 fledged chicks/pair) due to differing annual effects on nest success and chick survival. The colony location shifted between Rip Raps Island and the barge habitat, and location-specific conditions influenced annual productivity. Juvenile cohort return rates peaked at 4–6 years of age (mean: 0.13 ± 0.03); however, return proportions of the oldest cohorts decreased after five years of age. Consistent colony size, despite variations in productivity, suggests that retention and recruitment are influential dynamics, but more investigation into potential declines of juvenile return and recruitment into other colonies is needed.

Student

Changing public perceptions of declining Common Tern populations in inland North America through a comprehensive outreach program

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Abstract

Common Terns in inland North America have been experiencing population declines ranging from 25% in the Great Lakes region to 75% at the large lakes of Manitoba over the past 25 years. Given these trends, raising awareness of their plight becomes critical, as public favor can give weight to conservation efforts and motivate policy changes.

We developed a comprehensive outreach program to raise awareness of population declines and harness public favor for the Common Tern. This was piloted at Oneida Lake, NY in summer 2026. The program used three information types: a website, printed materials (e.g. brochures), and digital media (e.g. videos). This information was disseminated through various means, including direct programming at schools and parks, establishing a scavenger hunt for tern figures at local businesses, hand-distributing printed materials, posting on social media, creating a short educational video, and developing a teacher toolkit. About 200 people were directly reached, while more were indirectly educated about the Common Tern through seeing tern figures and physical materials around the community. Social media posts reached a further 15,000 individuals.

Outreach at Oneida Lake raised the profile of Common Terns among the local community, increasing knowledge about their value and plight. The program was designed to be easily adaptable to expand to other inland areas where terns are threatened and public outreach could be important for their protection. By raising awareness of Common Tern declines, we hope to motivate the public to support conservation action and policy for this species.

Student

Long-term changes in the egg-laying schedules of Leach's Storm-Petrels

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Abstract

Both natural climatic oscillations and anthropogenic climate change can shift the breeding schedules of seabirds. We studied phenological change in the egg-laying of Leach's Storm-Petrels (Procellariiformes: Hydrobatidae: *Hydrobates leucorhous*), a burrow-nesting seabird that breeds in colonies on remote islands. Our dataset from the breeding colony on Kent Island, New Brunswick, Canada included nest monitoring and individual mark-recapture data from 2001 to 2026, along with historical records extending to 1954. We quantified decadal advances in lay date in relation to global and regional climate conditions, individual breeding experience, and pair-bond tenure. Our results highlight how extrinsic, environmental factors have outpaced intrinsic, behavioral factors in setting the timing of reproduction. We discuss the consequences of these phenological shifts for storm-petrels and other vulnerable seabird populations.

Shifting phenology of urban American Oystercatchers in a changing world

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Abstract

The American Oystercatcher (*Haemantopus palliatus*), faces pressures from climate change, human activity, and predation. Because these threats are often interrelated, they pose a complex challenge to populations and conservation managers, and parsing out how populations respond to combined pressures is necessary to conserve populations in the face of these threats. We studied a large population of beach nesting American Oystercatchers on the Rockaway Peninsula in Queens, New York City, for 12 consecutive years. We recorded the presence of nests, eggs, chicks, productivity, and the duration of the breeding season, including the start and the end of the season. We analyzed our data to determine if productivity and the duration of the breeding season were changing. We found that productivity has declined, primarily due to losses of eggs from the nest, and the duration of the breeding season has increased, with the breeding season ending later. We propose that the increasing duration of the breeding season may be in part a response to decreased productivity driven by the loss of eggs during the incubation period, leading to new nest attempts, a behaviorally adaptive response via phenotypic plasticity to factors reducing reproductive success.

An experimental design for assessing the drivers of observer bias in sUAS surveys of waterbirds

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Abstract

Unoccupied aerial vehicles (UAVs) are becoming a more common method for surveying waterbirds. However, UAVs and unoccupied aerial systems (UAS) are still novel technologies. As such, surveys using these technologies may be sensitive to observer detection and identification bias which may impact the accuracy of waterbird abundance estimates. Low accuracy abundance estimates may induce managers to incorrectly allocate conservation resources between species, leading to fiscal and opportunity costs. Therefore, we sought to understand the factors most likely to have the largest impact on identification and detection rates, including flight design and timing, the biological and environmental context of sampling, and the experience level of observers that annotate imagery—and hence their impact on abundance estimation. We present an experimental design using waterbird decoys (scale reproductions of waterbird species), varied environmental factors (vegetation density and decoy density), and varied survey methods (time of day, UAV altitude, and observer experience) to determine if and how these varied conditions influence observer bias in detection and identification of waterbird species and individuals. Our experimental structure is a set of fully crossed factorial treatments, which will involve strategically deploying waterbird decoys, flying ≥ 180 UAVs video transects over these decoys (81 already completed), with at least six observers watching and annotating these videos. Finally, we propose the development of species-specific survey guidelines for conducting waterbird surveys. Our results are likely to apply directly to any system where these species occur and can serve as a template for designing UAS surveys in wetlands across the world.

Bandedbirds.org: A Web-based Relational Database for Reporting and Retrieving Observations of Individually Marked Birds

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Abstract

Many migratory shorebirds are experiencing significant population declines, and the underlying causes are not sufficiently understood. Marking birds with colored and coded leg flags, or with a unique combination of colored leg bands, provides a way to identify and track individual birds without recapturing them. Mark/Resighting data can be used to determine their spatial and temporal movement patterns throughout the annual cycle, inter-annual survival, duration at migration staging and stopover areas, and to estimate overall population size. Importantly, observations of marked birds can be used to establish connectivity among wintering, migrating, and breeding populations. For migratory species that travel between continents, this understanding is critical for developing conservation strategies. Observations made by the public (birdwatchers, photographers), are a significant resource for researchers. Previously, valuable sighting information from the public was lost, either because observers did not know where to report their observations or because their reports were overlooked amidst paperwork and emails. From BB.O's inception in 2009, over 100 participating projects, and the public, from Canada to Chile, have contributed over 200,000 banding records and over 625,000 resight observations. This coordinated, centralized registry for resightings of marked birds allows for submissions from researchers and the public-at-large from any location through easy-to-use, on-line forms. The website provides guidance to observers on how to observe birds while minimizing disturbance, and how to submit their reports. Through a Google Map interface, BB.O provides information about the banding location and previous sightings of birds they are reporting, a popular feature of the website.

Thermoregulation during incubation in the beach-nesting birds of southwestern Louisiana

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Abstract

Incubation represents a period of heightened vulnerability to predation for beach-nesting birds. Adults may reduce predation risk by selecting open nesting sites that provide greater visibility of approaching predators. However, reduced vegetation cover may expose nests to elevated temperatures, potentially increasing thermal stress and reducing reproductive success. During three breeding seasons, incubation temperatures were recorded for three species of beach-nesting birds (*Sternula antillarum*, *Rynchops niger*, and *Anarhynchus wilsonia*) across six study sites. Paired data loggers were deployed to simultaneously measure temperature within scrapes and in the surrounding environment, allowing comparisons between nest and ambient temperatures. Preliminary analyses indicate that nest temperatures significantly differed from external temperatures. Intraspecific comparisons also revealed differences in temperature between nests located in vegetated and non-vegetated areas. Initial results suggest that the incubation process may buffer nest temperatures against large fluctuations in ambient conditions. These findings indicate that nest characteristics and incubation behavior may influence the thermal environment experienced by developing embryos. Further analysis will determine whether vegetation cover and incubation behavior interact to moderate nest temperatures and assess the potential implications of these thermal conditions for reproductive success.

Exploratory Behavior and Colonization by Lesser Black-backed Gulls.

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Abstract

Lesser Black Backed Gulls *Larus fuscus graellsii* have expanded their range from western Europe, to the Faroe Islands, Iceland and Greenland beginning in the 1950s and continuing to the present. We sought to identify the mechanism for this very substantial range expansion by placing satellite -tracked transmitters on birds captured at Nantucket, MA during 2023-2026. All of our birds of breeding age went to southwest Greenland, and apparently nested there. Younger birds showed patterns of extensive exploration, ranging from Florida to the Canadian Arctic, France and the Azores. We show how this pattern of exploratory behavior is the basis for range expansion by birds, and likely other organisms.

“Elevating” American Oystercatcher conservation in Virginia – artificial nesting platforms to reduce flooding risk

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Abstract

Sea level rise (SLR) is one of the most pressing threats to American Oystercatchers (AMOY) throughout the range. Virginia is the most important breeding area for oystercatchers along the Atlantic Flyway supporting over 1,000 pairs. Critical AMOY habitats in Virginia are experiencing SLR rates higher than the global average. Our objectives were to develop a cost-effective artificial nesting platform to mitigate the impacts of SLR on AMOY nest success, evaluate adoption rates of AMOY with platforms, and measure AMOY nest success with and without platforms. In 2025, we designed and constructed 30 platforms and deployed them at 30 AMOY breeding territories in Virginia’s coastal marshes after full clutches were present. We relocated nests onto platforms and monitored adoption rates of nesting pairs. We then monitored the reproductive success of pairs with platforms and an equal or greater number of pairs without platforms. Twenty-eight of 33 (85%) relocated nests on platforms were successfully adopted by AMOY pairs. Apparent hatch success of all platform nest attempts was 50% compared to 31% for nests without platforms. Of platform nest attempts, 16% were overwashed compared to 30% of nests without platforms. Our results suggest that AMOY tolerance of this nest-level management is high, and using artificial platforms may be a viable management strategy for the species to reduce the threat of certain causes of nest failure such as flooding. Further analysis is ongoing to evaluate reproductive metrics relative to elevation of nests with and without platforms and to incorporate results from the 2026 season.

Estimating collision risk from offshore wind energy development

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Abstract

Due to difficulties with empirical measurement of bird collisions with offshore wind turbines, collision risk models have become a key tool to inform siting, permitting, and mitigation for offshore wind energy facilities. In the United States, the Stochastic Collision Risk Assessment for Movement (SCRAM) model was developed to evaluate collision risk for three seabird and two shorebird species: the Roseate Tern (*Sterna dougallii*), Common Tern (*S. hirundo*), Northern Gannet (*Morus bassanus*), Red Knot (*Calidris canutus*), and Piping Plover (*Charadrius melodus*). The most recent iterations of the model, completed in late 2026, use multiple types of tracking data to estimate exposure, passage rates, and behaviors of these species across the U.S. Atlantic Outer Continental Shelf, as well as using relative density data from at-sea surveys for one species where both data types are readily available. Multi-state movement models inform estimates of location and behavioral state, and flight height models inform three-dimensional understanding of risk to birds flying through wind facilities. In general, species with larger population sizes and more altitudinal overlap with wind turbine rotor-swept zones (e.g., Red Knots) tend to have higher risk of collisions than species with small populations that tend to fly close to the water's surface (e.g., Roseate Terns). However, estimates of collision risk are widely variable by location, as well as by wind facility design. These collision risk models inform risk projections and potential mitigation needs for offshore wind energy development in the U.S. Atlantic.

Offshore wind energy development and birds: Sharing information about risk and developing guidance for monitoring

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Abstract

The New York State Environmental Technical Working Group (E-TWG) informs and coordinates regional collaboration on birds and offshore wind energy development while facilitating access to science-based information. Activities include:

1. Providing responses developed by subject-matter experts to 23 Frequently Asked Questions (FAQs) about how birds interact with or are potentially affected by offshore wind energy development in the U.S. Atlantic.
2. Developing pathways for rapid sharing of science-based information on offshore wind energy development, birds, and the environment in anticipation of, and in reaction to, pressing issues as they arise in the public sphere. This effort has focused on: (a) forecasting potential topics that require a communications response, (b) collating a media library of existing communications resources, and (c) creating a network of experts who can serve as effective communicators and share science-based information to a broad audience.
3. Formulating expert guidance for avian movement studies to better understand the potential effects of offshore wind energy development on birds. With E-TWG support, bird-focused working groups within the Regional Wildlife Science Collaborative (RWSC) are creating a prioritized avian species list for tracking efforts, developing a framework for collaborative implementation of regional monitoring, and developing/updating guidance for using Motus telemetry in relation to offshore wind.

Combined, these communications and guidance efforts for a variety of end users support the sharing of accurate, readily understandable information on birds and offshore wind, and are facilitating use of the best available science to understand effects.

Waterbird casualties from a severe hailstorm in coastal Texas, USA: a rising threat in a warming climate

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Abstract

Climate-change models predict an increase in storms with severe hail (≥ 2.5 cm diameter). Severe hail can strike birds roosting in exposed areas, such as coastal islands and beaches, causing injuries and mortality. Detailed records of severe hailstorms impacting waterbirds are scarce, making it important to document their impacts when they are known. A severe hailstorm passed near Corpus Christi, Texas, USA on 1 November 2025 with wind gusts up to 111 km/h and hail stones up to 7.62 cm in diameter. The impacts to birds were assessed by six agencies using carcass counts, drone surveys, and rehabilitation data. We documented 1,860 casualties across 40 bird species, including 1,491 Brown Pelicans (*Pelecanus occidentalis*), 58 White Ibises (*Eudocimus albus*), and 50 Great Egrets (*Ardea alba*). We also recorded casualties from 44 Reddish Egrets (*Egretta rufescens*) and one Red Knot (*Calidris rufa*), both threatened species in Texas. We transferred 418 birds to rehabilitation and noted predominantly wing and head injuries, consistent with severe hail impact. Only 152 birds in rehabilitation survived, leading to a total of 1,561 documented mortalities. Our estimate is likely low because areas in the storm path without known roosts were not visited and some carcasses likely sunk or became buried during the storm. Our documentation adds to the record of impacts of severe climatic events on waterbirds and may provide a glimpse of another increasing environmental stressor from a warming climate.

Functional diversity of waterbird assemblages in tropical wetlands of an inter-Andean valley of Colombia

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Abstract

Tropical wetlands are critical habitats for waterbirds, yet face severe anthropogenic pressures from agriculture and urbanization. While functional diversity metrics offer deeper insights into community structure than species counts alone, waterbird functional diversity in Andean wetland systems remains poorly understood. Here, we characterized the functional diversity of waterbird assemblages across 35 wetlands in an inter-Andean valley of Colombia, contrasting rural and urban environments across dry and wet seasons. We built a multidimensional functional trait space via Principal Coordinates Analysis on Gower dissimilarity matrices subtracted from morphological, dietary, and foraging-stratum traits sourced from AVONET and Elton Traits databases. We quantified functional richness, functional dispersion, functional beta diversity, and species-level functional distinctiveness and uniqueness across four assemblage types: dry rural, dry urban, wet rural, and wet urban. The resulting functional space was dominated by body size (PC1, 46% of variation), followed by foraging stratum and diet (PC2, 17%). Rural wetlands consistently harbored greater functional richness, hosted more functionally unique species, and showed lower within group functional beta diversity than urban wetlands. Functional richness in rural wetlands during the wet season was significantly higher than in urban wetlands in both seasons. Urban assemblages, in contrast, exhibited higher functional turnover and smaller core functional spaces, consistent with biotic homogenization driven by urbanization. These findings highlight that landscape context is a stronger driver of waterbird functional diversity than seasonality and that rural wetlands in this region hold important conservation value as refugia for functionally unique and specialized waterbird species.