

2026 Joint Meeting *of the*  
**Association of Field Ornithologists**  
*and the* **Wilson Ornithological Society**



Salve Regina University, Newport, RI



Welcome to Newport, Rhode Island and Salve Regina University for the 2026 joint meeting of the Association of Field Ornithologists, and the Wilson Ornithological Society. The two societies have worked together to plan a dynamic scientific program to share the latest scientific work around ornithology and avian conservation.



This joint meeting will bring together professionals, students, and amateurs in ornithology and avian conservation from across the Western Hemisphere and beyond. We hope that you find this conference and venue an exciting opportunity to meet old and new colleagues, attend a great number of fabulous talks, be dazzled by more than a few student presentations, perhaps attend a workshop, stroll at least once on the Cliff Walk, and join one of the birding trips.

Jameson (Jim) Chace, PhD  
Local Host for AFO- WOS 2026



**AFO**  
ASSOCIATION OF  
FIELD ORNITHOLOGISTS  
Est. 1922



# Sponsors

We would like to thank all of our sponsors, without whom our event would not be possible!

## Gold Sponsor



## Bronze Sponsors



## General Sponsors



**Audubon Society  
of Rhode Island**

## Location and Venue

The 2026 joint conference of the Association of Field Ornithologists and Wilson Ornithological Society is taking place in the historic city of Newport, Rhode Island on the 80 acre campus of Salve Regina University.

**Newport** - Founded in 1639, Newport, Rhode Island is considered to be the shining gem in the coastal crown of New England. A haven for religious dissenters, a critical Colonial Era port city, a thriving artists' colony, a summer playground for America's barons of industry during the Gilded Age, home to the U.S. Naval War College and known as America's First Resort, Newport is a destination like none other.

As the State's principal tourist center and resort community, Newport is visited annually by millions of tourists who attend special events, sail, and view the City's mansions and other attractions. The City's popularity has stimulated significant private investment in retail shopping facilities, hotels, timeshare units, restaurants, clubs, and other tourist-oriented enterprises. Discover Newport provides residents and visitors with information on area attractions, accommodations, events, and restaurants.

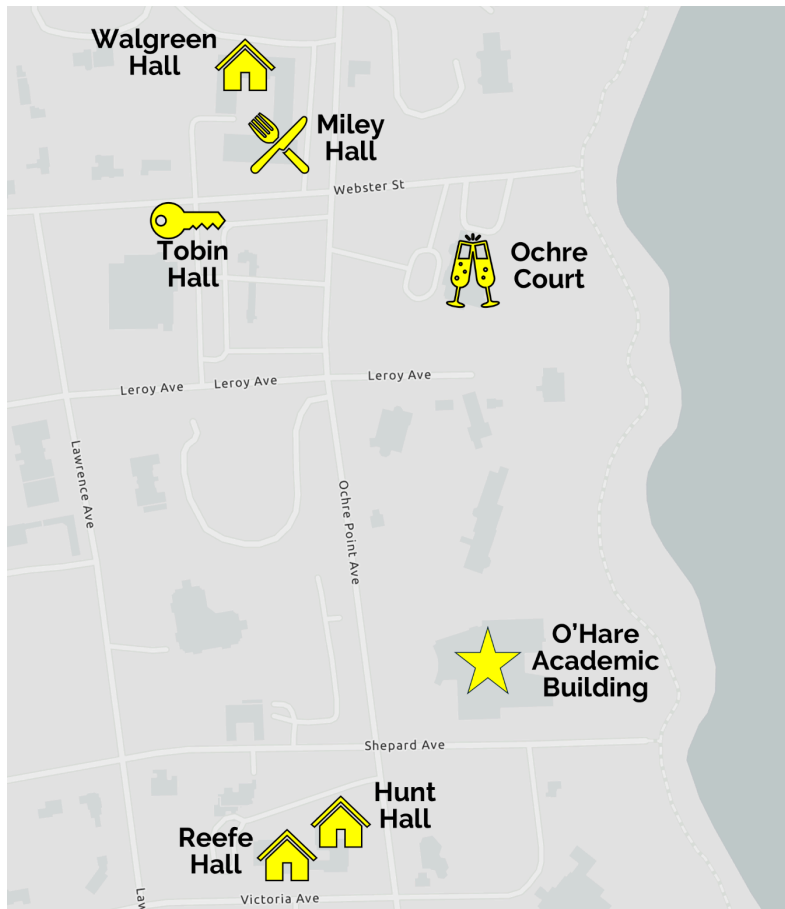
<https://www.newportri.gov/visiting-newport/around-the-city/tourism>

First time in Newport? Discover Newport guide:

<https://www.discovernewport.org/blog/post/first-timers-guide/>

**Salve Regina University** - Salve Regina College, founded by the Sisters of Mercy, opened its doors in 1947, in the turn-of-the-century Newport mansion Ochre Court (where AFO-WOS 2026 will have the closing banquet). Salve Regina became coeducational in 1973 and achieved university status in 1991, at which time the school's charter was amended to change the name of the corporation to Salve Regina University. Today, the University enrolls more than 2,700 men and women from 45 states and 29 nations and boasts over 26,000 alumni worldwide. The rigorous course of study integrates responsible citizenship and public service, while the interconnection of academic programs forms a foundation for students to reflect and learn within the context of mercy values.

<https://salve.edu/>



### Scientific program:

Registration, vendors, oral and poster presentations, workshops, and council meetings will take place at **O'Hare Academic Building**.

### Dorm housing:

For those staying on campus, check-in can be done at the registration desk (**O'Hare Academic Building**). **Reefe and Hunt Halls** are adjacent to the O'Hare to the southwest and **Walgreen Hall** is to the north. After-hours check in (*times forthcoming*) can be done at the security desk at **Tobin Hall**.

### Dining:

Lunch will be provided at **Miley Hall**. For those staying in campus dorm rooms, breakfast is included in your reservation and will also be provided at Miley. The closing reception and banquet will be held at **Ochre Court**.

A fully-interactive campus map is available online at: <https://map.salve.edu/>

# Land Acknowledgement

*(Note: the university does not have an official land acknowledgement statement)*

Salve Regina University in Newport, RI acknowledges that we are gathering, speaking and learning on the ancestral lands of the Narragansett People, as well as the Niantic and Wampanoag who have cared for this land and water for countless generations. We recognize their resilience in the face of adversity and appreciate the opportunity to honor their memory through action. We acknowledge the cultural significance and history of the past and present. As a community dedicated to Mercy and Justice, Salve Regina University aims to continue the relationship with indigenous people. We commit to becoming stewards of this land by actively teaching and learning more about their experiences.

(Written by the International Social Work class, Fall '25)

## Transportation and Parking

All travel information can be found on the website, including a link to sign up for shuttle service from the airport to campus: <https://afowos2026.org/travel-and-hotel-info/>.

Parking is available widely across the Salve Regina University campus. There are parking lots at both dorms for those staying overnight on campus, ample parking along Ochre Point Avenue, Shepard Avenue and across from O'Hare Academic Center where most of the conference events take place. Please see [campus map](#) for details.

## Food, Drink, and Other Local Attractions

**Discover Newport** - Hop on - Hop off Trolley comes through the Salve Regina campus every 15-20 minutes. The Bellevue trolley, **Route #67**, will be free from **May 22** through **October 31, 2026**. Popular attractions along the routes are; Redwood Library, International Tennis Hall of Fame, Newport Mansions, Cliff Walk, Belcourt, Rough Point, First Beach and many more. <https://www.discovernewport.org/>

The campus is located on the Cliff Walk, a 3.5 mile National Recreational Trail ([link](#)). Additionally, the campus is a [level two arboretum](#) with, this year, nesting Osprey and Cooper's Hawk.

The McKillop Library is open within the limited summer hours ([link](#))

The Rodger's Recreation Center has fitness rooms available during summer hours ([link](#))

Gilded Age Tour:

<https://www.newportmansions.org/events/inside-the-gilded-age-tour-2026/>

Colonial Newport Tour: <https://newporthistory.org/tours/>

Food and Drink: so many to choose from in Newport, and especially along [Thames Street](#). The Trolley from campus will bring you downtown from campus, but it is also a very pleasant walk.

# Code of Conduct

## Meeting Code of Conduct

This Code of Conduct is intended to set clear expectations of behavior at the AFO/WOS 2026 Joint Meeting to ensure that all participants feel safe and welcome and that AFO/WOS 2026 is a positive experience for all.

The partner societies welcome everyone to AFO/WOS 2026 and celebrate diversity in all its forms. The AFO and WOS are dedicated to providing an inclusive environment that is collaborative, supportive, and engaging for everyone involved and that is free of discrimination, harassment, and retaliation. We expect all participants to help in this mission by being respectful and considerate of each other, providing supportive critique, and embracing the multitude of opinions that are on offer.

## Meeting Scope

AFO/WOS 2026 is intended to foster the open and honest communication of ornithological science and to promote equality of opportunity and treatment for all participants. Effective communication requires courteous interactions and respect for the intellectual property of our colleagues. We represent the field of ornithology, and it is imperative that we behave as professionals toward all conference participants, including, but not limited to, conference delegates, society employees, conference volunteers, sponsors, and exhibitors.

All forms of communication among AFO/WOS 2026 participants during the meeting are considered within the scope of the AFO/WOS 2026 meeting and thus fall under the jurisdiction of the Code of Conduct. These include public and private communications, social media posts and direct messages, phone calls, and other forms of written, verbal, and non-verbal (including visual) communication. Additionally, communication as described above that occurs before or after the AFO/WOS 2026 meeting but that pertains to content associated with the meeting and/or relies on contact information of a meeting participant that was procured before or during the meeting may also fall under the purview of this Code of Conduct.

## Expectations of Participants

Harassment between participants of AFO/WOS 2026 will not be tolerated in any form. Harassment includes any communication with or behavior towards another participant that involves offensive gestures, verbal and written comments, posts on the internet and social media, deliberate intimidation, stalking, harassing photography or recording, sustained disruption of talks or other events, inappropriate physical or electronic contact, microaggressions, and unwelcome attention. It is possible to engage in harassment without the

intention of doing so. Participants asked to stop any harassing behavior by anyone are expected to comply immediately, regardless of their intent.

## Use of Media Associated with the Meeting

By registering for and attending this Meeting, Participants agree to allow AFO/WOS 2026 to use photos, videos, or audio recordings taken of them during the Meeting in publications, promotions, and on the websites and social media pages of the participating societies. Only participating Societies may (a) take/make or distribute audio or video recordings of the Meeting or Participants or (b) distribute them (via social media or other means).

Participants wishing to share information from the Event and/or post photos via social media, whether of their own material or that of others, must adhere to individual social media platforms' stated rules and policies. We ask that presenters and hosts of Events that do not want content or information shared via social media clearly communicate this to members of the audience and that members of the audience adhere to such requests.

## Reporting an Incident

Any individual covered by the Code of Conduct who believes that they have been subjected to harassment, notices that someone else is being harassed, or has any other concerns about an individual's behavior should report the incident immediately. Similarly, any breaches of the Code associated with media use should be reported immediately. Potential violations of the Meeting Code of Conduct should be reported promptly to the AFO/WOS 2026 Safe Meeting Committee via [afowos2026safecomm@googlegroups.com](mailto:afowos2026safecomm@googlegroups.com) for review. All complaints will be treated seriously and reviewed promptly, and may be investigated. To contact the Safe Meeting Committee, please use the group email, which will go to the entire committee.

Bad faith reporting under the Code of Conduct will be considered a violation of the Code of Conduct, where bad faith reporting is defined as intentionally false and/or malicious reporting of code of conduct violations against another attendee.

## Disciplinary Action

Individuals found to have engaged in behavior prohibited by this policy, as well as those making allegations of a breach of the Code in bad faith, will be subject to disciplinary action. The AFO/WOS 2026 Safe Meeting Committee may take any action they deem appropriate, ranging from a verbal warning or ejection/prohibition from the specific activity in question (e.g., workshop, symposium, or even the entire conference), banning them from future conferences run or jointly run by the partner societies, revoking membership in one or more of the partner societies, and/or the reporting of their behavior to their employer and research funders.

## Retaliation Is Prohibited

AFO/WOS 2026 will not tolerate any form of retaliation—including seeking to violate the confidentiality of a reporting individual—against individuals who file a complaint or assist in an investigation or against any individuals suspected of doing so. Retaliation is a serious violation of this policy and, like any breach of the Code itself, will be subject to disciplinary action.

## Questions & Appeal

Any questions regarding this policy should be directed to the AFO/WOS 2026 Safe Meeting Committee. In the event that an individual involved in any reported incident is dissatisfied with the disciplinary action, they may appeal to a committee made of the collective members of the executive committees from partnering societies.

# Presentation Guidelines

**Oral presentation guidelines:** Oral presentations may be 15 minutes maximum in length, with 5 minutes for questions while we transition to the next speaker. Each session will have a moderator who will assist with keeping presenters on schedule. Our projectors will be able to handle 4:3 and 16:9 aspect ratios. Instructions on where to upload your PowerPoint or PDF file will be sent in late June. Note that you will not be able to use your own computer to run your presentation.

**Poster presentations:** All posters must be printed prior to your arrival, printing is not available on site. Posters should be landscape format, and no more than 48 inches wide by 36 inches tall.

# Plenary Speakers

*August 8th - On behalf of AFO*

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Dr. Phil C. Stouffer

**Pervasive impacts of climate change on Amazonian rainforest birds**



For decades we've been following how Amazonian birds respond to landscape change. Only recently have we found a parallel story emerging from undisturbed forest. Many understory resident birds show declining abundance and increased mortality since the 1980s, associated with hotter and drier dry seasons. More surprisingly, most species have changed shape and are now lighter with longer wings. Birds are also behaving in ways that suggest avoidance of thermal stress. Collectively, these results and similar patterns from other Neotropical sites show the reach of anthropogenic consequences even in the absence of direct forest alteration.

*August 9th - On behalf of WOS*

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Dr. David King

**Three decades of applied ornithological research on non-breeding migrants**



Dr. David King is an Adjunct Professor in the Department of Environmental Conservation at the University of Massachusetts, Amherst. Both at UMass Amherst and in his parallel career as a Research Wildlife Biologist US Forest Service Northern Research Station, David has studied habitat and land management practices to support migratory birds across their full annual cycle.

*Dr. King will be awarded the Margaret Morse Nice Medal, the premiere ornithological award bestowed by the Wilson Ornithological Society. The medal, established in 1997, honors a lifetime of contributions to ornithology.*

# Schedule Overview

	Tuesday	Wednesday	Thursday	Friday	
	July 7	July 8	July 9	July 10	
6	Workshops and council meetings	Field Trips (pre registration required)	Field Trips (pre registration required)		
630					
7		AFO Plenary & Business meeting [O'Hare 160]	WOS Plenary & Business meeting [O'Hare 160]		
730					
8		30 min break	30 min break		
830					
9		Concurrent Sessions	Concurrent Sessions		
930					
10		Lunch [Miley]	Lunch [Miley]		
1030					
11		Concurrent Sessions	Concurrent Sessions		
1130					
12		Concurrent Sessions	Concurrent Sessions	Judges Meeting @ 3:50 [O'Hare 117]	
1230					
1		Concurrent Sessions	Concurrent Sessions	Judges Meeting @ 3:50 [O'Hare 117]	
130					
2		Concurrent Sessions	Concurrent Sessions	Judges Meeting @ 3:50 [O'Hare 117]	
230					
3		Concurrent Sessions	Concurrent Sessions	Judges Meeting @ 3:50 [O'Hare 117]	
330					
4	Concurrent Sessions	Concurrent Sessions	Judges Meeting @ 3:50 [O'Hare 117]		
430					
5	Concurrent Sessions	Concurrent Sessions	Judges Meeting @ 3:50 [O'Hare 117]		
530					
6	Mixed Flocks Meetup [O'Hare 117]	Poster Session (light food) [O'Hare]	Banquet & Awards Ceremony (full dinner included with registration) [Ochre Court]		
630					
7	Welcome Reception (light food) [O'Hare Lobby]	Poster Session (light food) [O'Hare]	Banquet & Awards Ceremony (full dinner included with registration) [Ochre Court]		
730					
8	Welcome Reception (light food) [O'Hare Lobby]	Poster Session (light food) [O'Hare]	Banquet & Awards Ceremony (full dinner included with registration) [Ochre Court]		
830					

Tuesday, July 7, 2026

830						
9	Workshop: Visualizing and analyzing bird movement data in R [O'Hare 203]	Workshop: Beginner's guide to bird tracking technologies [O'Hare 204]	Workshop: Training sound into discovery [O'Hare 205]	AFO council meeting (AFO council only) [O'Hare 106]		
930						
10						
1030						
11						
1130						
12	Mixed Flocks Meetup [O'Hare 117]			AFO council meeting (AFO council only) [O'Hare 106]		
1230						
1						
130						
2						
230						
3						
330						
4						
430						
5						
530						
6						
630						
7	Welcome Reception [O'Hare Lobby]			AFO council meeting (AFO council only) [O'Hare 106]	WOS council meeting (WOS council only) [O'Hare 107]	
730						
8						
830						
					WOS Council Member Social (WOS Council only) [TBA]	

Wednesday, July 8, 2026 (Updated 6/29)

6-8am	Field Trips (Pre-registration required)		
800	Plenary Session and AFO Business Meeting [O'Hare 160]		
830			
9			
930			
10			
1030	BREAK		
	ROOM A [O'Hare 160]	ROOM B [O'Hare 260]	ROOM C [O'Hare 106]
11	Benefits of uniparental care exceed its costs in a family of monomorphic, insectivorous passerines - Kristina Cockle	Tracking Fall Migration with Motus: The Fate of Surviving Window-struck Passerines - Cailin O'Connor	Use of anthropogenic foraging cues in urban American crows - Andrea Townsend
1120	A southern perspective on bird molt: insights from bird banding in the temperate Neotropics - Martín Pérez*	Wetland migrant landbirds have narrow stopover niches relative to forest migrants - Lucas DeGroot*	Reliable Thresholds, Reliable Inference: Calibrating Deep Learning Models for Passive Acoustic Monitoring for Community-Scale Bird Monitoring - Pooja Panwar*
1140	Migratory Ecology of Wilson's Snipe - Kevin Perozeni*	The effects of urbanization on migratory and non-migratory movements of White-winged Doves - Marianna Wharff*	Effect of Invasive Species on Ecosystem Functioning - Anna Berg*
12-140	LUNCH [Miley Hall]		
	ROOM A [O'Hare 160]	ROOM B [O'Hare 260]	ROOM C [O'Hare 106]
140	SYMPOSIUM: TEACHING IN ORNITHOLOGY - Introductions	Impacts of ticks and forest management on Appalachian breeding birds - Anna Rose	Working together to understand the King Rails of southeastern Arkansas: migration status and nesting ecology - Auriel Fournier
2	Feature counter-stereotypical scientists in curricula with the Biologists and Graph Interpretation (BioGraphI) Project - Suann Yang	Tissue-Level Accumulation and Deposition of Nano- and Microplastics in Clapper Rails from the Texas Gulf Coast - Keith Andringa*	Innovative Thermoregulation and Behavioral Trade-offs: House Crows ( <i>Corvus splendens</i> ) Adapt Incubation Strategies to Urban Hazards in Dhaka, Bangladesh - Ahmad Faysal*
220	Planting birder seed: raising the next crop of community scientists in ornithology - Timothy O'Connell	Activities of Harmful Bacteria in North American Vulture Guts - Jasper Chao*	Breeding Status and Subcolony Membership Predict Foraging Space Use in Great Black-backed Gulls - Dylan Titmuss*
240	Using eBird data to answer place-based questions with a community partner in a field ornithology course - Maureen McClung	Haemosporidian parasite diversity in Red-tailed Hawk populations of Northeastern North America - Maria A. Pacheco	The benefits of human-bird connection: An empirical investigation - Jennifer Andrews
3	Fire and Birds - A web-based authentic inquiry project for introductory ecology class - X. Ben Wu	Impact of illegal pet trade on the survival of African grey parrots and rescue-rehabilitation interventions in Nigeria - Chinedu Mogbo	Resource selection of White-winged Doves breeding across urban gradients in Texas, USA - Megan Spina*
320-350	BREAK		
350	Birds, Fire, and Grazing: Connecting Rangeland Management Education to Bird Habitat on Working Lands - Andrew Kasner	Testing Gloger's Rule: A Comparative Study on Plumage Colour and Genetics of Beringian Songbirds - Noelle Deane*	Living on the Fringe: Pinyon Jays without Pinyon Pine - Lesley Howard
410	Featherbrained AI: How Bad Bird Images Build Better Observers - Ashley Long	Hand-rearing of the Hooded Grebe: Summary of a fundamental strategy for its conservation - Ignacio Roesler	Decoupling of bird migration from the changing phenology of spring green-up - Timothy O'Connell
430	Exploring the physics of flight using competition and the scientific method - Letty Reichart	Landscape-scale influences on the value of shade coffee to flocking birds in the Panamanian Highlands - Leah Crenshaw*	Inter-seasonal and large-scale movements in pinyon jays ( <i>Gymnorhinus cyanocephalus</i> ) in the northern Great Basin - Rory Eggleston*
450	Symposium closing remarks and question session	The number of human-simulated predators influences the escape behaviour of bird species in a West African protected area - Ngozi Okafor* [RECORDING]	Uncovering the Activity Patterns of Northern Saw-whet Owls on their Wintering Grounds - Adeline Volz*
530-730	POSTERS (light food) [O'Hare]		
	DINNER ON YOUR OWN		

\* Indicates student presentation

Thursday, July 9, 2026 (Updated 6/29)

6-8am	Field Trips (Pre-registration required)		LGBTQIA+ and Allies Social (pre-registration required) [0645-0745]
800	<b>Plenary Session and WOS Business Meeting</b>		
830			
9			
930			
10			
1030	<b>BREAK</b>		
	ROOM A [O'Hare 160]	ROOM B [O'Hare 260]	ROOM C [O'Hare 106]
11	Genetic structure suggests mixed kinship in Palmchat ( <i>Dulus dominicus</i> ) compound nesting groups - Joshua LaPergola	Getting the most bang for your buck: Ensuring bird-friendly conservation programs fully support and activate landowners' interests in conservation action - Ashley Dayer	<b>Meet the Editors Session</b>
1120	The song of a flockmate, the threat of a rival: heterospecific vocal cues and territorial responses in Amazonian flocks - Danny Zapata*	A decade of urban bird-window collision reports reveals strong seasonal and taxonomic patterns - Violet Lange*	
1140	Circadian usage patterns of avian foraging guilds associated with an abandoned granite-quarry urban refuse site of south-western Nigeria - Rachael Akinola* [RECORDING]	Heterogeneous urban environments result in heterogeneous bird vocalizations - Kaiya Provost	
12-140	<b>LUNCH [Miley]</b>		
	ROOM A [O'Hare 160]	ROOM B [O'Hare 260]	ROOM C [O'Hare 106]
140	<b>SYMPOSIUM: BIRDS OF RHODE ISLAND</b> Audubon of Rhode Island's Conservation Framework - Sarah Deckel	Evolution and functional characterization of olfactory receptors in birds - Robert Driver	Understanding how frugivorous birds shape tropical forest recovery - Nicole Lussier
2	Sediment placement restores drowning marshes and Saltmarsh Sparrow ( <i>Amospiza caudacuta</i> ) nesting habitat in Rhode Island - Samuel Miller	Positive selection on an amylase gene among <i>Corvus</i> spp., but not in urban American Crow populations - Dave Colucci	What makes local conservation efforts successful at promoting avian biodiversity? - Shana Caro
220	When to Stop Waiting: Habitat Recovery for Beach-Nesting Birds in Rhode Island - Maureen Durkin	Open habitats support breeding birds, but higher temperatures shift their activity at a prairie under restoration in Arkansas - Maureen McClung	High overlap, subtle differences: trophic niche structure in tropical resident birds - Kimberly Navaro-Valez
240	Baseline Assessment of Saltmarsh Sparrow ( <i>Amospiza caudacuta</i> ) Breeding Across Nine Rhode Island Salt Marshes to Guide Tidal Marsh Restoration Design and Adaptive Management - Alison Kocek	Effect of urbanization on the diet preferences - Anant Deshwal	Building the case for Flocks: Three studies about ornithologists' belonging, disparities, interest in and value of affinity groups - Ashley Dayer
3	Assessment of an Urban Greenspace for Breeding and Migratory Songbirds - Jameson Chace	Bioacoustic indices from soundscapes correlate with Amazonian rainforest patch size, but not very well - Philip Stouffer	The Flocks Project: Affinity Groups Building Community in Ornithology - Anna Rose
320-350	<b>BREAK</b>		
350	Effect of forest management for American Woodcock on Eastern Towhee and Prairie Warbler reproductive success - Megan Gray	Using Google Earth Engine to develop interactive mapping tools for conservation planning - Jane Kunberger	Born to Be City Slickers? Cavity Nesters in Urban Environments. - Kiersten Newtoff
410	Eastern Whip-poor-will ( <i>Antrostomus vociferus</i> ) nesting ecology: behavior of nesting adults and chick growth - Liam Corcoran	Protecting Magellanic Plover in Austral Patagonia: Evaluating Predator and Anti-Trampling Exclosures - Ignacio Roesler	Royal Origins of Bird Ringing in Europe - Matthew Halley
430	Symposium closing remarks and Rhode Island Avian Conservation Discussion	100+ years of research on female bird song - Lauryn Benedict	Using "virtual ecology" approaches to improve avian point count study design - SK Winnicki
450		TBD	TBD
510-6	<b>BREAK</b>		
6-830	<b>BANQUET [Ochre Court]</b>		

\* Indicates student presentation

## Posters

Poster Number	Title	Authors
1	Do Size and Plumage Dimorphism Correlate with High Territoriality in Female Kingfishers?	Paige Hollander, Julia Gebeck, Daniel Goldberg
2	Non-breeding Season Spatial Use and Behavior of Eastern Bluebirds ( <i>Sialia sialis</i> ) in Maryland	Alan Reich, Kevin Omland
3	Chick Growth and Survivorship in Great Black-backed Gulls ( <i>Larus marinus</i> )	Stella Risinger, F. Dylan Titmuss, Nichola Hill, Kristen M. Covino
4	Beyond the Cordgrass: Quantifying Winter Habitat for Two Imperiled Marsh Birds	Tabitha W. Olsen, Trey Barron, Christopher J. Butler
5	Habitat Improvement and stopover success of migratory birds in an urban microforest.	Wren Logan, Kathleen Farley, Julián Rondón Rivera, Mirko Schoenitz, Claus Holzapfel
6	Avian vocal mimicry affects automated bioacoustic classification: A case study with a North American mimic	Carmen S. Reisdorf, Andrew C. Kasner, Justin P. Wied, Jacquelyn K. Grace, X. Ben Wu
7	Spatial Distribution of Sympatric Owl Species in South Texas	Claire Molina, Andrea Montalvo, Lindsay Martinez, Jane Kunberger, Ashley M. Long
8	Effects of fire on the occupancy and habitat associations of the Northern Ground Hornbill ( <i>Bucorvus abyssinicus</i> ) in a heterogenous tropical Sudan savannah landscape.	Lois I. David, Nguvan M. Agaigbe, Samuel T. Ivande, Fidelis A. Atuo
9	Comparing Estimated Avian Species Richness Between Point Counts and Autonomous Recording Units	Alexander N Hoxie, Jane M Kunberger, Andrea Montalvo, Michael L. Morrison, Ashley M Long
10	Climate-driven, species-specific trends of globally threatened migratory ducks in the East Asian-Australasian Flyway	Faysal Ahmad, Chen Chen, Zhao Qilin, Moh Moh Maung Zin, K. M Aarif, Jinglan Liu, Hamed A. El-Serehy
11	The composition of avian assemblages in riparian ecosystems of the Southeastern United States: the role of habitat structure, botany, and hydrologic conditions	Kathryn Schabron, Alban Guillaumet, Barrie Lee Sullivan, Alvin Diamond, Brian Helms
12	Breeding Bird Responses to Active Forest Management in the Pine Barrens of Southeastern Massachusetts	Evan Dalton
13	Bird Seed Variations in Attracting Birds	Alder Dayer-Meyers

14	A meta-analysis on the use of Propranolol on non-domesticated birds.	Elle Kauppi
15	Analyzing Trends in Bird Fecal Contamination in Coastal New Hampshire Waterways	Reka Ivanyi, Steve Jones, Margaret Eid, Alex Rakowski, Robin Batchelor, Elisabeth Petit, Randi Foxall, Cheryl Whistler
16	Why so defensive? Nest defense behavior in Great Black-backed Gulls ( <i>Larus marinus</i> )	Kayla M Cannon, F Dylan Titmuss, Mary E Everett, Sarah J Courchesne, Kristen M Covino
17	Egg Turning and Incubation Trade-offs during Asynchronous Hatch in Wild Scarlet Macaws ( <i>Ara macao</i> )	Adam C. Bower, Constance J. Woodman, Gabriela Vigo-Trauco, Donald J. Brightsmith
18	Surviving the Storm: Impacts of the Gulf Coast Blizzard on Overwintering Wilson's Snipe	Kevin Perozeni, Ashley M. Long
19	Optimizing Acoustic Monitoring: Detection Distance Insights for Bird Surveys in South Texas	Kasey M. Pirkle, Alexander N. Hoxie, Andrea B. Montalvo, Ashley M. Long
20	Mountain Plover Wintering Status and Behavioral Analysis on Sod Farms in West-central Texas	Maika Sloan, Tania Homayoun, Ben R. Skipper, Andrew C. Kasner
21	Roost Tree Characteristics of Egyptian Vulture ( <i>Neophron percnopterus</i> ) in the Chitwan-Annapurna Landscape (CHAL) of Nepal.	Ashish Pariyar, Vernon Byrd, Dinesh Bhusal, Krishna Prasad Bhusal, Suman Bhattarai.
22	Day-Night Movement and Home Range of Breeding American Oystercatchers on the Texas Coast	Aeris Clarkson, Rebecca Bracken, Chris Butler
23	Observer differences in bird detection: How relevant are they for monitoring?	Igor Berkunsky
24	Black-capped Vireo nest habitat and thermal microclimate in shrub canopies in the Edwards Plateau	Andrew C. Kasner, Sarah A. Macha, James G. Giocomo, Tania Homayoun, Ben R. Skipper
25	Breeding success of cavity-nesting birds in relation to native vegetation in a residential suburb	Medhavi Ambardar, Joanna E. Demas, Mabel Kirst
26	Monitoring avian migration at Paul Smith's College in the northern Adirondacks using nocturnal flight calls	Hannah Pryor, William R. Evans, Jorie Favreau, Harold Mills, Kelly B. Klingler
27	Comparative observations of summit metabolism in Carolina Wrens ( <i>Thryothorus ludovicianus</i> ) at the northern edge of their periphery and other wintering bird species	Morgan Gear, Joel Ralston
28	Trends in Carolina Wren ( <i>Thryothorus</i>	Natalie Anderson, Joel Ralston

	<i>ludovicianus</i> ) abundance in response to warming temperatures at the northern and southern peripheries of its range	
29	The Human-Wildlife Conflict: Understanding Andean Condor Poisoning Events in Ecuador	Margaret Hemp, Jessie Williamson
30	Reference genome and demographic history of the Moroccan double-spurred spurfowl ( <i>Pternistis bicalcaratus ayesha</i> )	Harshita Rana, Giovanni Forcina, Abdellah Ichen, Balaji Chattopadhyay, Kritika M. Garg
31	Genomic signatures of isolation and reduced diversity in an island-endemic hummingbird, the Puerto Rican Mango ( <i>Anthracothorax aurulentus</i> )	Alix E. Matthews, Sebastian Gallego, Valentina Alaasam, Marcella Baiz
32	Cormorant Diversity in the Aleutian Islands	Iqra Dubed, Isaiah A. Faso-Formoso, Elle Kauppi, Maggie Gibson, David Kim, Douglas Causey, Jess McLaughlin
33	Interspecies Social Interaction as a Determining Factor on Hummingbird Migration Timing	Coralie Rossbach
34	Comparison of Observer-based Detection Methods and BirdNET Outputs Across Seasons and Land Cover Types	Ravynn A. Garcia, Jane M. Kunberger, Ashley M. Long
35	Comparing Methods to Estimate the Seasonal Migration Distance of Land Birds	Andrea Benavides Castaño, Matthew D Hack, Max L Witynski, Benjamin M Winger

# Field Trips

## AFO-WOS 2026 Field Trips

### **July 8th and 9th**

Birding meet up at O'Hare Academic Center at 6 am. Carpooling will be arranged to visit local birding hotspots with graduate students from University of Rhode Island. Please see Liam at the Registration Desk for details.

### **July 8th and 9th**

The Norman Bird Sanctuary is a 300-acre nonprofit, unaffiliated wildlife refuge in Middletown, RI. It hosts 22 different plant communities resulting in varied habitats ranging from coastline, to saltmarsh, fields, forests, and ridges. The Sanctuary's bird checklist contains 240 species.

Conference attendees can partake in two morning bird walks at the Norman Bird Sanctuary from 6:00 – 7:30 AM on July 8<sup>th</sup> and 9<sup>th</sup>. This is access to the membership based Sanctuary before trails open. Space is limited: Maximum 12 people.

Register here:

<https://www.eventbrite.com/e/afo-wos-2026-field-trips-tickets-1991917642289?aff=oddtcreator>

### **Birding with Audubon RI**

Friday, July 10, 6:00 - 10:00 am

Audubon Society of RI birding experts are offering a trip just for AFO-WOS conference attendees. Hop in a van to explore Aquidneck and Conanicut Islands to look for raptors, wading birds, and songbirds. We know the best spots! Please dress for the weather and bring your binoculars. Van space is limited so register soon.

Maximum 12 people, minimum 5 people.

\$45 per registration.

<https://asri.doubleknot.com/event/birding-with-audubon-ri/3147982>

(Registration will begin on Monday, June 15 at 7:00 am and close on Thursday, July 9 at 5:00 pm)

# Special Events

## Flocks Meet-up

**Tuesday July 7, 5:30 to 7:00pm**

Please join members and leaders of [The Flocks Project](#) we seek to build stronger communities across ornithology so that everyone feels like they belong. Through collaborations with AFO, WOS, and AOS we have established affinity groups (Flocks) to enhance belonging and engagement across ornithology. This private meetup is for current and prospective flocks members to get together and learn more about the initiative. Please join us if you are interested!



Learn more about the Flocks Project: [www.flocksproject.org](http://www.flocksproject.org)

## LGBTQIA+ & Allies breakfast social

**Thursday July 9, 6:45 to 7:45am**

This social event is an opportunity to converse with colleagues who identify as lesbian, gay, bi, trans, otherwise queer, as well as allies to this community, to discuss LGBTQIA+ experiences and representation in ornithology and beyond. We will promote a welcoming atmosphere at this event and provide opportunities for folks to meet other members of the queer community and those who support the community. We will create opportunities to promote discussion in a safe atmosphere with small breakout groups and conversation topic suggestions.



Breakfast will be provided for all registrants. Interested individuals should check the box for the event when they register for the conference, and they will be contacted by email with more details prior to the event.

**This event will be private.** All contact information gathered when signing up will be kept confidential and not retain after the event. All attendees are expected to maintain the privacy of participants both during and after the event. Questions? Contact Kristen Covino ([Kristen.covino@lmu.edu](mailto:Kristen.covino@lmu.edu))

## Meet the Editors

**Thursday July 9, 11am to 12pm**

This interactive session offers a valuable opportunity for early-career ornithologists and prospective authors to meet the editorial team of the Journal of Field Ornithology and the Wilson Journal of Ornithology.

Join the Editors to learn about the journals' scope, editorial workflow, and tips for successful manuscript submission. The session will include an open discussion on best practices in scientific publishing, from both the author's and editor's perspectives, and time for questions. Whether you're preparing your first manuscript or seeking to understand the review process better, this is an opportunity to engage directly with the people behind the journal.

The event will include:

- JFO overview + Co-EIC and Editorial Board Introductions
- WJO overview + Co-EIC and Editorial Board Introductions
- Insights on the peer review process (aimed to early careers and undergrads)
- Open discussion



Dr. Kristina Cockle  
WJO co-EIC



Dr. Ernesto Ruelas Insunza  
WJO co-EIC



Dr. Rafael Rueda Hernández  
JFO co-EIC



Dr. Phil C Stouffer  
JFO co-EIC

# Abstracts

## Oral Presentations

(Alphabetical order by presenter's last name)

### **Innovative Thermoregulation and Behavioral Trade-offs: House Crows (*Corvus splendens*) Adapt Incubation Strategies to Urban Hazards in Dhaka, Bangladesh**

**Faysal Ahmada**, Atikul Islam Mithu, Erdenekhuu Batbold, Jinglan Liu

This study quantifies the incubation activity and survival problems of Dhaka's House Crows using a mixture of empirical observation and some statistical analysis. Over a period of 10 days, we tracked breeding pairs' time budgets (N=10 records), and a significant difference existed from expected incubation behavior ( $\chi^2=14.7$ ,  $p<0.01$ ). Crows spent only 21% of observation time in active incubation within the nest, with the crow of highest priority being stay beside nest (43%) and absence near nest (40%). One tactic facilitated by innovative deployment of rat skin for passive thermoregulation. Kruskal-Wallis tests confirmed non-random allocation of time among activities ( $H=6.86$ ,  $df=2$ ,  $p=0.032$ ), with Spearman correlations showing almost perfect negative association between nest attendance and absence ( $\rho=-0.971$ ,  $p<0.001$ ). K-means cluster analysis identified three distinct behavioral syndromes: 1) resource-acquisition oriented (Cluster 1), 2) balanced investment (Cluster 2), and 3) nest-guarding biased (Cluster 3), displaying context-dependent adaptation. Notably, 100% of observed nests ( $n=19$ ) in 2025 in march held hazardous anthropogenic items, namely kite strings with entanglement accidents. We verify that urban House Crows employ: (1) truncated direct incubation through supplementary thermoregulation, (2) behavioral flexibility to optimize nest guard and foraging trade-offs, and (3) risk-taking nesting material that increases mortality. The findings promote understanding of the evolution of urban birds by evaluating the manner in which native residential bird species partition their reproductive effort by quantifying their adaptations to man-made challenges indicating an immediate requirement for waste management protection measures in tropical cities.

### **Circadian usage patterns of avian foraging guilds associated with an abandoned granite-quarry urban refuse site of south-western Nigeria**

**Akinola Rachael**, Yisau Muyideen

With fast urbanization and economic growth, there is an increase in inadequate waste management, resulting in environmental pollution. Open dumpsites are a common way to dispose of solid waste in Africa and Nigeria. These dumpsites have become an artificial site for birds of various foraging guilds resulting in high population densities in a few opportunistic species which could impair ecological balance promoting disease transmission. We conducted a study in a highly urbanised area in the Abeokuta South Local Government Area, Ogun State,

Nigeria, from October 21 to December 15, 2019, focusing on the diversity and abundance of bird species associated with an abandoned granite-quarry waste management location, the dumpsite of Saje. We evaluated the species composition and abundance of the avian community in the Saje dumpsite using point counts. A total of 1047 birds from 27 species, representing 17 families and 10 orders, were counted: 593 in the morning and 454 in the evening. Our study supports other findings that the presence of waste materials disposed of in dumpsites is the major reason for the peaking abundance of opportunistic commensal bird species in urban areas, providing easy and steady access to abundant food resources. This research advances urban center management and conservation awareness. Open landfills should be converted into refuse recycling and/or power generating plants, where the negative consequences of avian pests would be minimized according to lowered food resource availability for birds dependent upon uncontrolled refuse management in open landfill areas.

### **The benefits of human-bird connection: An empirical investigation**

**Jennifer Andrews**

Although exposure to nature has robust links to mental health benefits, exposure to birds in the wild has also begun to receive increasing attention in the clinical literature because of its connection to well-being and conservation behaviors. For example, although some scientists have documented the general happiness and positive emotions that humans feel around birds, empirical data on mental health and birding are still scant and lack diversity. Our lab addressed this gap through multiple survey studies with Black American students who completed baseline and follow-up surveys of mental health, including the focus of the present study, mindfulness, after completing 2-hour birdwalks in local parks and nature preserves hosted by both amateur birders and professional local Audubon chapter leaders. We were particularly interested in the construct of mindfulness for this study as it may serve as a bridge between mental health and concern for the environment. Our preliminary results support a link between birding and improvements to mindfulness demonstrated by scores on two widely used mindfulness measures. These initial results align with findings from the nascent literature on birding and mental health and provide valuable diversity data with a sample of young Black students. Implications for mental health and connections to more general environmental/conservation behaviors will be discussed, as well as limitations to the current data and suggested future directions.

### **Tissue-Level Accumulation and Deposition of Nano- and Microplastics in Clapper Rails from the Texas Gulf Coast**

**R Keith Andringa, Andrew Austin, Karl Kaiser, Jacquelyn K Grace**

Nano- and microplastics are pervasive in Gulf ecosystems, yet standardized monitoring across coastal habitats remains limited. Saltmarsh birds, particularly the Clapper Rail (*Rallus crepitans*), offer strong potential as regional indicators because Gulf Coast populations are non-migratory, occupy small home ranges, and occur continuously in saltmarshes across the

entire region. As a result, they are exposed to local inputs of plastic contamination through multiple environmental pathways. Despite extensive work quantifying plastics in avian gastrointestinal tracts, little is known about the accumulation of nano- and microplastics in internal tissues after absorption through the bloodstream, where toxicological effects are most likely to occur. We investigated the presence and composition of twelve major industrial plastic polymers in Clapper Rail tissues using pyrolysis tandem gas chromatography–mass spectrometry (pyrGC-MS). Rails were collected from Galveston Bay and Matagorda Bays, both characterized by high contaminant loads and substantial plastic inputs. Liver, kidney, heart, and skeletal muscle were digested, filtered, and analyzed via pyrGC-MS, and nanoplastic signatures will be compared with gastrointestinal microplastic loads from the same individuals to assess cross-tissue accumulation. Though still ongoing, this study provides one of the first tissue-based assessments of nano- and microplastics in wild birds, and the first comparing multiple tissues within the same individual, and offers new insight into how plastic contamination accumulates in saltmarsh wildlife. These findings will also highlight the feasibility of integrating resident marsh birds into a broader Gulf-wide monitoring framework that uses resident, specialist species as ecological indicators of local pollutant exposure.

## **100+ years of research on female bird song**

**Lauryn Benedict**

Some authors have defined bird song as a trait restricted to male songbirds, but most modern ornithologists recognize song from both sexes. Moreover, the past 50 years have seen an exponential increase in the volume of research studying song in female birds of many species. I traced the history of the study of female birdsong from ancient Greece through the 21st century, asking when and why authors excluded or included females from research on bird song. Results suggest that singing females have long been recognized by some authors but not others. Aristotle discussed song as a seemingly functional trait of both male and female birds, while Darwin considered female song to be an anomaly hardly worth recognizing. Since Wittichell published his foundational work on bird song in 1896, the literature has shown a mosaic of song definitions and variable recognition of female song. Through this time, global perspectives and close observation of study populations (both wild and captive) have consistently led researchers to recognize and describe female bird song.

## **Effect of Invasive Species on Ecosystem Functioning**

**Anna Berg, Anant Deshwal**

*Phragmites australis* is an invasive wetland plant that outcompetes native vegetation. The aim of this study is to understand the effect invasive *Phragmites* have on species and functional diversity of birds and plants. I hypothesize that functional richness, evenness, and divergence of vegetation and bird communities will be altered in areas invaded by *Phragmites*. I expect them to be lower than wetlands with no *Phragmites*. I will use the Passive Acoustic Monitoring

approach to quantify species and functional diversity of birds in *Phragmites*-dominated and native plant-dominated habitats. I will use a multispectral drone to quantify the plant species and productivity at each site using NDVI as my metric for productivity. By quantifying the functional effects of *Phragmites*, we can understand the effect they have on ecosystem functioning and the urgency in mitigating the spread of invasive plants such as *Phragmites*.

### **What makes local conservation efforts successful at promoting avian biodiversity?**

**Audrey Cozine**, Valeria Lopez, Kaiya L Provost, Shana M Caro

Birds' worlds have changed. More than 75% of the globe's terrestrial land mass has been affected by humans, for agriculture, industry and habitation. In North America, 4.75% of all land is completely covered by impervious surfaces, a proxy for the intensity of urbanization. Some regions, such as Long Island, NY, have as high as 53% impervious cover. Land use can have profound impacts on avian species richness and composition, often reducing biodiversity and promoting invasive species. Local municipalities and community groups have tried to ameliorate this through small-scale conservation efforts, but the efficacy of such efforts is not well established, nor are the most useful interventions known. We addressed this gap using autonomous recording devices deployed across field sites on Long Island from February to October 2025. These sites include nature preserves, botanic gardens and universities. We used BirdNET to determine species' presence based on vocalizations. We recorded site characteristics such as total area, green and impervious land cover, distance from major transit lines, vegetation diversity, and the presence of bird-oriented features such as permanent fresh water and pollination gardens. Surprisingly, total area was not a strong predictor of species richness. This offers support for municipalities setting aside small areas for conservation if larger space is unavailable. Instead, vegetation diversity, the percent of green space, and bird-friendly interventions were better predictors of species richness. These findings provide concrete actionable items that municipalities and community groups can implement, such as installing pollination gardens in local parks.

### **Assessment of an Urban Greenspace for Breeding and Migratory Songbirds**

**Jameson F Chace**

Urban greenspace conservation provides opportunities to protect habitat for breeding songbirds as well as migratory stopover sites. The vegetation at urban conservation easements are often dominated by exotic invasive plants, and such habitat conservation might be of relatively low value for breeding productivity and stopover refueling. In Middletown, RI, one such conservation easement, Sweet Flag, has been the focus of over 10 years of fall migratory stopover assessment and five-year breeding productivity and survivorship analysis. Compared to a near shore island of similar habitat structure, Sweetflag had more breeding species, but lower abundance of those. Common species at both sites had significantly more hatch-year Common Yellowthroats (*Geothypis trichas*) and Song Sparrows (*Melospiza melodia*) on the island than urban riparian conservation easement (Sweet Flag). Between year survivorship was

respectively higher on the island for Song Sparrow, N. Yellow Warbler (*Setophaga aestiva*), and Gray Catbird (*Dumetella carolinensis*). During fall migration (2012-2025) over 108 species used the urban riparian habitat. The most common migrant species captured (Gray Catbird, Song Sparrow, Swamp Sparrow (*Melospiza georgiana*), and Blackpoll Warbler (*Setophaga striata*)) exhibited a decrease in the body mass index when regressed against time since sunrise. Combined, these results suggest the urban conservation easement (Sweet Flag) is not a high quality breeding habitat nor high quality stopover habitat for migratory birds, and may be a habitat “trap” for some. The implications for urban habitat conservation easements are that active management may be required to maintain and promote quality habitat for songbirds using urban greenspaces.

### **Activities of Harmful Bacteria in North American Vulture Guts**

**Jasper Chao**, Mónica Medina, Gary Graves, Antton Alberdi

Vultures in the Cathartidae and Accipitridae families play key roles in their environments, breaking down decomposing animal matter and recycling nutrients. Without scavengers, carrion would harbor, grow, and spread several species of harmful pathogenic bacteria through an ecosystem. The Cathartidae family, comprise the seven North and South American vulture species, including the Turkey Vulture (*Cathartes aura*) and Black Vulture (*Coragyps atratus*), widespread and common species in the Americas that serve as models to study this ecologically important and threatened group of birds. Vultures can consume carrion, or decaying animal bodies, and avoid the effects of toxic compounds found in these carcasses. While this ability has been attributed to a highly acidic stomach pH, many similar studies have shown inconsistent or contradictory measurements. Instead, vulture’s dietary constitution may be contributed to by their gut microbiomes. Vulture gut microbial communities have been shown to contain high proportions of Clostridia and Fusobacteria despite those taxa providing most negative microbial co-occurrences with other bacterial taxa. These results suggested that the presence of Clostridia and Fusobacteria and their toxins are tolerated by their hosts in exchange for the breakdown of carrion. We analyzed the microbiomes of *Cathartes aura* and *Coragyps atratus* using whole genome shotgun sequencing to identify functional potential and link specific bacteria to their metabolic pathways. We hypothesize that these typically harmful bacteria will continue to carry pathogenic functions despite their high abundances. The outcomes of this study will contribute to a broader understanding of scavenger ecology and gut microbiome evolution.

### **Benefits of uniparental care exceed its costs in a family of monomorphic, insectivorous passerines**

**Kristina L Cockle**; Milka R Gomez; Carlos A Ferreyra; Facundo G Di Sallo; Alejandro Bodrati

Uniparental care occurs in 7% of altricial birds, generally associated with male ornamentation and frugivory, but its occurrence in Furnariidae, a family of little brown insectivores, remains unexplained by conventional theory. We hypothesized that, compared to biparental care,

uniparental care has costs (smaller clutch size, lower nest attentiveness, longer nest periods) and benefits (lower nest predation [by reducing parental activity around the nest]) that balance one another (similar number of fledglings) to make it a stable strategy for insectivorous tree-cavity-nesting Furnariidae. To examine these short-term fecundity costs and benefits in sexually monomorphic Furnariidae, we compared life history traits of five uniparental and five biparental species at 210 tree cavity nests monitored 2006–2025 in the subtropical Atlantic Forest of Argentina. In alignment with our predictions, uniparental species had 1 egg less than biparental species and 21% longer incubation and nestling periods, but produced almost twice as many fledglings per egg ( $0.54 \pm 0.08$ ,  $n = 37$ ) compared to nests of biparental species ( $0.29 \pm 0.06$ ,  $n = 57$ ), mostly because of whole- and partial brood loss (presumably to predation) in biparental species. Exceeding our expectations, the benefits of uniparental care did not only balance its short-term fecundity costs but resulted in 40% more fledglings per nest (mean  $\pm$  SE:  $1.4 \pm 0.1$  fledglings/nest) compared to biparental nests ( $1.0 \pm 0.2$ ; Wilcoxon Test  $p = 0.02$ ,  $n = 141$ ). We conclude that uniparental care can be an effective strategy to optimize fecundity in monomorphic birds under certain ecological conditions.

### **Positive selection on an amylase gene among *Corvus* spp., but not in urban American Crow populations**

**Dave J Colucci**

Digestive enzymes, such as the amylases which break down dietary starch, play an important role in adapting populations to their diets. Selection on amylase genes has adapted human populations and their commensals to starchy anthropogenic diets, but their role in bird populations remains unexplored. Successful urban bird populations of many species show dietary shifts towards anthropogenic foods, suggesting that similar selection on amylase genes may have occurred. To test this, we sequenced an amylase gene, AMY2A, in six paired urban and rural populations of American Crow (*Corvus brachyrhynchos*), a widespread generalist in North America that has successfully bred in urban areas for decades and often eats anthropogenic food. In addition, we obtained AMY2A sequences from eight *Corvus* species to evaluate its role in the ecological diversification of the genus. We found extensive genetic variation among American Crows, including polymorphisms that are likely to affect starch digestion. We did not find strong evidence of selection in urban populations. Instead, deviations from neutral evolution in both urban and rural populations suggest a shared population expansion resulting from beneficial human landscape modifications over the past several hundred years. Among *Corvus* species, we found codons that have experienced positive selection and one codon that experienced positive selection only in species that can successfully inhabit cities. Our results provide the first look at an amylase gene in a wild bird, provide evidence that AMY2A plays a role in adapting *Corvus* species to their diets, and suggest future approaches to studying AMY2A adaptations in bird populations.

### **Eastern Whip-poor-will (*Antrostomus vociferus*) nesting ecology: behavior of nesting adults and chick growth**

**Liam Corcora**, Megan Gray, Scott McWilliams

Eastern Whip-poor-will (*Antrastomus vociferus*) populations have declined precipitously since 1970, yet key aspects of their breeding biology remain understudied compared to other aerial insectivores. We used trail cameras to monitor 14 nests during May–August 2023 in Rhode Island, USA. We estimated sex-specific incubation constancy (number of minutes per day on the nest) and observed behavioral interactions of adults with the nest, between paired males and females, between adults and chicks, and between adults and predators during the incubation and chick rearing stages. Additionally, we quantified chick growth trajectories for nine morphometric measurements, and growth rates for the four most informative measurements. Females spent  $92 \pm 2\%$  of the 24h period incubating, while males only assisted with incubation  $4 \pm 4\%$  of the time. Paired males and females displayed a rarely documented courtship-like behavior at the nest. We also observed incubating females singing the male song, an anti-predator defensive behavior, and a slug as a predator of an egg. We provide the first published estimates of chick growth for the species and generated predictions of chick size that estimated chick age to a range of 1–2 days based on four measures (mass, tarsus length, humerus length, and wing chord). Whip-poor-will growth rates were like those of similar sized nightjars and other aerial insectivores. Our growth models provide a baseline for assessing the effects of habitat quality on whip-poor-will chick growth, and a valuable tool for estimating nesting phenology and enhancing survival analyses through precise age-specific survival estimates.

### **Landscape-scale influences on the value of shade coffee to flocking birds in the Panamanian Highlands**

**Leah C Crenshaw**, Ruth E Bennett, Amanda D Rodewald

Shade-grown coffee exemplifies agroforestry's potential to support livelihoods and biodiversity. Yet most research on birds in coffee systems focuses on farm-level effects on single species or broad metrics like abundance and richness. How management affects within-community dynamics—such as mixed-species foraging flocks (MSFs)—remains poorly understood, as does the role of landscape context in mediating community responses. We investigate how local- and landscape-scale habitat characteristics influence MSF composition on farms and forests in the Panamanian Highlands. We ask: (1) how does MSF composition vary with habitat attributes at both scales, and (2) how do vegetation structure and MSF participation influence warbler foraging niche occupancy? We surveyed farms and forest plots in Chiriquí, Panamá from 2024–26, and measured vegetation structure and land cover to model relationships among habitat, MSF composition, and niche use. We found that resident species were more sensitive than migratory species to mismatches between landscape context and local management—such as full-sun farms in forested landscapes or shaded farms in deforested areas. MSF participation varied with landscape context and farm management in three of the five most common species, suggesting that the costs and benefits of MSF participation are context-dependent and that vegetation structure changes driven by agroforestry shape not only individual species but interspecific interactions. Ongoing focal species foraging observations will

determine how vegetation structure drives warbler niche use. By examining ecological processes affected by agriculture, we aim to clarify why only some species flourish in coffee agroecosystems while others do not.

### **Getting the most bang for your buck: Ensuring bird-friendly conservation programs fully support and activate landowners' interests in conservation action**

**Ashley A Dayer**, Kelley Langhans, Kelsey Jennings, Joseph Gerdes, Steve Hagenbuch, Sarah Hewitt

With bird species in decline across North America, habitat conservation programs that strategically aim to bolster populations are critically important. Grassland and Eastern forest birds are among the groups experiencing serious declines, with population decreases of 43% and 27%, respectively, since 1970. In an era of limited conservation funding, it is crucial to ensure that programs are motivating maximal conservation action among motivated private landowners. We explored innovations to facilitate conservation in two bird-friendly programs – one, Audubon's Bird-friendly Maple Program, focused on a market-based incentive; the other, a Conservation Innovation Grant offered by Audubon Upper Mississippi River to ranchers, supplementing traditional cost-share for grasslands conservation practices with payments for bird-occupancy outcomes on their properties. Through interviews of nearly 50 producers engaged in these programs, we gathered information on 1) how a bird-friendly, market based program can better facilitate ongoing conservation action among maple producers in their sugarbushes and 2) how the addition of bird occupancy payments impacts ranchers' involvement in a conservation effort and increases perceived benefits of a program. We found that maple producers are willing to take more action but need additional guidance from conservation practitioners on priorities, communication that ongoing management actions are expected, follow up visits to review management priorities, and, especially among women, more support in accomplishing the management actions. We found mixed perceptions of the importance of bird occupancy payments in program adoption, with some landowners simply satisfied with the cost-share. We believe these insights will be valuable for other private lands conservation programs.

### **Building the case for Flocks: Three studies about ornithologists' belonging, disparities, interest in and value of affinity groups**

**Ashley Dayer**, Nathan Thayer, Kristen M. Covino, Tim O'Connell, Jennifer Smith, and Dai Shizuka

Affinity groups may be one path towards increasing a sense of belonging and support within professional societies. To better understand their value and need, the Flocks research team conducted three studies in collaboration with the Wilson Ornithological Society, the Association of Field Ornithologists, and the American Ornithological Society. First, we brought together members of the Rainbow Lorikeets, an existing affinity group within the American Ornithological Society that acts as a committee or caucus representing members of the Queer community, to

hear their perspectives. In 2023, at the time the focus groups with members were conducted, Rainbow Lorikeets was the only affinity group in ornithological societies. Participants described multiple benefits, such as feeling connected to a community within the discipline, having a space where they feel safe to be themselves, finding support in challenging times, and raising the visibility of the community within the discipline. In 2024, we conducted a survey of members of all three societies, revealing high interest in joining affinity groups in ornithology in general. Individuals from marginalized communities reported a higher perception that affinity group membership would positively benefit them. There was a high level of support for potential functions of affinity groups, such as the need for community, mentoring, and collaborative environments in ornithology. Our last study asked a question many researchers are asking across the sciences: “why are so many scientists leaving their fields?” We found ornithologists who feel a stronger sense of belonging in their discipline are more likely to intend to stay in ornithology. This study also found disparities across demographic groups. Participants from marginalized communities reported lower senses of belonging and higher intentions to leave. Our results suggest affinity groups can help reshape ornithology into a more inclusive and supportive field that retains ornithologists from all backgrounds.

### **Testing Gloger’s Rule: A Comparative Study on Plumage Colour and Genetics of Beringian Songbirds**

**Noelle Deane**, Ray Bennett, Isaiah A Faso-Formoso, Iqra Dubed, Elle Kauppi, David Kim, Malachi Cochrane, Veronica Padula, Jess McLaughlin

Gloger’s Rule refers to the trend of endotherm populations in cold, humid environments displaying darker pigmentation. St. Paul Island, Alaska, is a remote island in the Bering Sea with a cold, humid climate. Despite having multiple genetically distinct songbird populations that are described as darker than their mainland counterparts, studies relating to Gloger’s Rule in songbirds on the island are few and far between. In this study, the plumage colour and genetics of songbirds on St. Paul Island will be compared to their intraspecific counterparts on the mainland. The focus species for this study will be grey-crowned rosy-finch (*Leucosticte tephrocotis*), pacific wren (*Troglodytes pacificus*), snow bunting (*Plectrophenax nivalis*), and lapland longspur (*Calcarius lapponicus*). Colour-corrected photographs of songbirds will be taken of both live birds on St. Paul Island and mainland Alaska. Hex numbers will then be taken from these photographs and compared to determine if there is a difference in plumage colour between populations. Whole-genome sequences of St. Paul Island songbird samples will be compared to reference genomes from mainland Alaska museum specimens to determine if key melanogenesis genes are diverging between populations. Songbird populations on St. Paul Island are expected to have darker plumage than their mainland counterparts, and key melanogenesis genes are expected to diverge between populations. This study will provide insights into the evolution of plumage colour in understudied high latitude areas.

### **Audubon of Rhode Island's Conservation Framework**

**Sarah C Deckel**

The Audubon Society of Rhode Island has several ongoing research projects including invertebrates, pollinators, raptors, and breeding and migratory birds. With the recent publication of the Rhode Island Bird Atlas in 2023, Audubon of RI has established research projects to better understand bird populations across the state and the habitats they depend on. One example of this is the “State of Our Birds” report, which outlines relationships between several bird species and three key habitat types: deciduous forest, scrub-shrub, and wetlands. In response to these patterns, Audubon of RI has designated nine Responsibility Bird Species that function as umbrella species whose conservation supports broader ecological resources. This presentation will review Audubon of RI’s current understanding of Rhode Island’s birds, past and ongoing research, and future goals for the organization. I will discuss the rationale behind the nine Responsibility Bird Species and how our management and restoration plans will impact the future of these species. Finally, I will share how this framework is shaping future research in Rhode Island, and strategies that Audubon is implementing to engage landowners to participate in conservation for bird species.

### **Wetland migrant landbirds have narrow stopover niches relative to forest migrants**

**Lucas W DeGroot**, Andrea Kautz, Brandon Hoenig, Emily Cohen

Long-distance migratory movements require birds stopping to rest and refuel and migrating landbirds are generally assumed to broaden their niche during stopover to accommodate the variability and unpredictability of habitats encountered en route. However, we lack a clear understanding of how habitat availability might shape diet, microhabitat selection during stopover. We used a multidimensional niche framework, integrating new tracking and dietary tools, to test whether breeding land cover affinity predicts stopover niche position and breadth. Our results support our predictions that (i) species that breed in rarer wetland landcover types show more constrained stopover niches than species that breed in more common forest landcover types, and (ii) species differ in niche position and breadth during migratory stopover in ways that reflect breeding-habitat affinities rather than converging on a broadly shared stopover niche space. Our findings underscore a broad and basic principle: landscapes that appear intact at coarse scales can fail functionally when species depend on narrow, fine-grained conditions. Conservation strategies must therefore move beyond generic cover metrics to maintain the structural and microclimatic diversity that sustains constrained niches—an urgent priority in the face of accelerating anthropogenic declines.

### **Effect of urbanization on the diet preferences**

**Anant Deshwal**, Anna Berg, Sophia Borjon, Sonia Tomczyk, Michael P Ward, Thomas J Benson

Among several land use and land cover change drivers, urbanization is often credited with being the biggest driver of the global insect decline and biotic homogenization. The various disturbances associated with urbanization (e.g., habitat fragmentation and light pollution)

promote species and functional homogenization across the majority of taxa, affecting inter-species interactions. Thus, to quantify how habitat fragmentation and degradation affect multi-trophic species interactions, we quantified 1) the diet of passerines and near-passerines and 2) the diversity and abundance of the available prey species (Lepidoptera) in urban and natural settings. We used DNA fecal metabarcoding to analyze fecal samples from 34 passerines and near-passerines. We estimated the availability of their prey by sampling for Lepidoptera at the same sites using the UV light traps. We identified macro-moths at the species level and quantified the abundance of each species for each sampling site. We noted high moth species turnover between urban and natural sites with very low nestedness, indicating that the prey availability is not the same between the urban and natural sites. We predict the bird diet to be opportunistic and show plasticity in prey preference depending on prey availability and abundance. We expect finches to include more insects in their diet in natural settings compared to their counterparts in urban environments. We also predict the diet composition to be more diverse in the summer season compared to the fall season as a response to the prey availability.

### **Evolution and functional characterization of olfactory receptors in birds**

**Robert Driver**, Mona Marie, Hiroaki Matsunami, Christopher Balakrishnan

An incredible variety of chemicals are perceived as smell by animals. To detect this vast range of volatiles, odorant receptors (ORs) have diversified into one of the largest gene families in vertebrates; for example, many mammals have over 1,000 OR genes. Birds, with over 10,000 extant species, inhabit nearly all land environments and exhibit diverse breeding and foraging behaviors yet were long thought to make limited use of olfactory signals. Here, we used genomic and molecular approaches to demonstrate the relevance of the avian olfactory system. We show that, like mammals, bird genomes often contain hundreds – or in some cases, thousands – of intact ORs, including the nocturnal kiwi (*Apteryx manetllii*), which possesses the largest number of ORs known from any animal. The majority of avian ORs belong to a bird-specific expansion known as gamma-c ORs. We found that this expansion was characterized by extensive gene conversion leading to mosaic open reading frames with diverse regions interspersed with regions nearly identical in nucleotide sequence. We show that avian ORs are expressed in olfactory sensory neurons and respond to specific odors in vitro and in vivo. Notably we identify for the first time ligands for avian ORs documenting both unique function in gamma-c ORs and shared function with a deeply divergent mammal OR. Our findings highlight commonalities between mammals and birds in olfactory system function but also reveal a unique evolutionary feature: the widespread role of gene conversion shaping the majority of bird ORs. Our results challenge prior assumptions and underscore the importance of olfaction in the life history of birds.

### **When to Stop Waiting: Habitat Recovery for Beach-Nesting Birds in Rhode Island**

**Maureen M. Durkin**, Nick Ernst, Samuel Miller, Benjamin Gaspar, Wenley Ferguson, Karrie Schwaab, Alison R. Kocek, Veronica Masson

Barrier island systems are highly dynamic and stay resilient in the face of storms and changing sea levels by building width and maintaining height by accreting sediment transported over the dune crest by storm surge. Stabilization of this system through roads, hardened structures, or invasive vegetation prevents sediment overwash, leading to elevation loss and narrowing. Beach nesting birds such as Piping Plover (*Charadrius melodus*; PIPL) depend on healthy barrier systems and overwash events to reduce encroaching vegetation, open sandy nesting-habitat patches, and restore access for chicks to forage on the low energy back-barrier. Due to careful management, Rhode Island's PIPL population has shown recovery, reaching record pair numbers in recent years. Despite these same management efforts, two sites have not seen the population gains other sites have. At Moonstone Beach, PIPL pair numbers and productivity have been in decline since 2017. At Ninigret, PIPL pair numbers have remained low for the amount of available habitat. At each site, invasive vegetation has encroached on valuable beach-nesting bird habitat and stabilized the barrier. At Moonstone Beach, Refuge staff began invasive removal through herbicide treatment, mowing, and mulching of common reed (*Phragmites australis*) and beach rose (*Rosa rugosa*) in December 2024. In 2025, PIPL immediately recolonized the treated area, pairs increased from 11 to 13, and productivity rose from 0.09 to 0.92 chicks/pair. At Ninigret, Japanese black pine (*Pinus thunbergii*), and Japanese knotweed (*Reynoutria japonica*) were removed in early 2026 and both the dune system and PIPL population will be monitored throughout 2026.

### **Inter-seasonal and large-scale movements in pinyon jays (*Gymnorhinus cyanocephalus*) in the northern Great Basin**

**Rory Eggleston**, Eric Thacker, Dave Dahlgren

The pinyon jay (*Gymnorhinus cyanocephalus*) is a highly social corvid closely associated with piñon-juniper woodlands. This species has seen steep population declines in the past 50 years but the mechanisms behind this decline are not well understood. Data on the ecology of the species, particularly in the Great Basin and northern fringes of its range, is sparse, which further complicates conservation efforts. Concurrent to an ongoing Endangered Species Act Status Review, there is a concentrated effort to collect data on the habitat needs of the species. We quantified pinyon jay space-use and inter-seasonal movements within four pinyon jay flocks (n = 20 individuals) in the Great Basin-Columbia Basin interface through utilization distributions and integrated step-selection functions. Individuals within pinyon jay flocks had strong space-use overlap with other individuals within their home flock across the breeding and non-breeding seasons, and jays during the breeding season tended to select towards moderate amounts of piñon-juniper cover and higher elevations, but against increasing sagebrush cover. However, jays also selected towards locations that had higher relative diversity of plant functional groups. Jays that exhibited long-range movements during the fall and spring appeared to select for habitat characteristics similar to those of resident counterparts from their home flocks. These findings highlight aspects of habitat that may be critical to pinyon jay flocks during the breeding

season, and allow land managers to begin addressing the intersecting conservation needs of pinyon jays, sagebrush-obligate species, and livestock within these dynamic landscapes.

### **Working together to understand the King Rails of southeastern Arkansas: migration status and nesting ecology**

**Auriel MV Fournier**, Jess Novobilsky, Anne Puchalsky, Jason McCallie, Karen Rowe, Caleb P Roberts

King Rails are a state listed marsh birds in most states, other than gulf coast states, within the Mississippi Flyway. King Rail populations are experiencing multiple decade long declines, especially in the Midwest and Great Lakes where all individuals are migratory. King Rails have a split migration strategy where some individuals migrate, and some are fully resident along the Gulf Coast. Our work has been a close collaboration between the Arkansas Game and Fish Commission, the USGS Arkansas Cooperative Fish and Wildlife Research Unit and Forbes Biological Station to understand the migration status and nesting ecology of King Rails in southeastern Arkansas at a site where they are thriving, with the goal of applying what we learn to expand the abundance and distribution of King Rails across the Mississippi Alluvial Valley. To date we have shown that most adult King Rails in southeastern Arkansas are year around residents, and that King Rails are selecting nest sites based on vegetation structure. Ongoing work seeks to assess drivers of nest success, and understand the dispersal and migration patterns of juvenile King Rails. This talk will present our results to date, as well as the collaborative process we have undertaken.

### **Effect of forest management for American Woodcock on Eastern Towhee and Prairie Warbler reproductive success**

**Megan E. Gray**, Liam S. Corcoran, Scott R. McWilliams

Shrubland birds, such as American Woodcock (*Scolopax minor*), Eastern Towhee (*Pipilo erythrophthalmus*) and Prairie Warbler (*Setophaga discolor*), across North America have declined significantly in the last 40 years with declines attributed primarily to forest regrowth, natural disturbance suppression and anthropogenic pressures. Woodcock populations in Rhode Island, USA are no exception and as such the Rhode Island Department of Environmental Management creates early successional habitat to increase habitat available for woodcock. However, the extent to which habitat management for woodcock benefits nontarget birds has not been adequately assessed to date. We compared metrics of reproductive success of Eastern Towhee and Prairie Warbler between sites characterized as having high- or low-likelihood of selection by woodcock. Relative likelihood of selection by woodcock was developed from a resource selection function of over 140 male woodcock. During the 2022 and 2023 breeding season in southern Rhode Island we compared density and territory size of Eastern Towhee and Prairie Warbler at three high-and three- low likelihood of selection sites. We also determined nest fate, camera trapped for provisioning rates of adults to nestlings and monitored these nestlings for growth rates. We found support for the umbrella species concept for Eastern

Towhees in that there was a greater density of males raising nestlings in better condition at high likelihood of selection sites. However, we did not find similar results for Prairie Warblers, suggesting that the effectiveness of site-level management for woodcock benefits some but not necessarily all shrubland nesting songbird species.

## **Royal Origins of Bird Ringing in Europe**

**Matthew R Halley**

The historical origins of bird ringing (banding) have long been obscured by historiographical error, particularly the conflation of inscribed “vervels” (metal rings affixed by falconers to their bird’s jesses) and tarsal rings used by modern ornithologists. In this talk, I correct the misattribution of ringing to King Henry II of France (1519–1559) and reposition its emergence within ritualized falconry hunts targeting *Ardea cinerea* (grey heron), which were annually staged by European royal courts since the Middle Ages. Overlooked sources from Vienna (pre-1737), Brühl (1737), Dresden (1751), and Het Loo (1767) reveal that tarsal ringing originated not as a scientific tool, but as a courtly demonstration of ownership of local fauna, and dominance over political subordinates. As such, ringing was often accompanied by formal decrees and dramatic spectacles. The occasional recapture of marked individuals, far from their ringing sites, ironically underscored the permeability of political borders. The oldest known records of tarsal ringing trace to the Austrian court of Charles VI (1685–1740), Holy Roman Emperor, but the phenomenon was pan-European and further research may yet reveal older records.

## **Living on the Fringe: Pinyon Jays without Pinyon Pine**

**Lesley E. Howard**, Jay D. Carlisle

The pinyon jay (*Gymnorhinus cyanocephalus*) is a gregarious, seed-caching corvid closely associated with pinyon-juniper woodlands across much of western North America. At the northern edge of their range, however, they often occur where pinyon pine is absent. In Idaho, nearly all known historic and contemporary colonies occur in juniper stands, suggestive of different habitat relationships at the northern extent of their range. Our objective was to refine an Idaho-specific habitat suitability model for Pinyon Jays and identify habitat characteristics associated with breeding colonies in areas where pinyon pine is absent. We combined breeding-season occurrence data, remotely sensed environmental covariates, fine-scale drone imagery collected at each colony, and machine-learning approaches to evaluate habitat characteristics associated with known colonies and identify areas of high suitability. We expected to find that breeding colonies in Idaho are associated with juniper-dominated stands near sagebrush rather than with pinyon pine, and that these habitat relationships differ from those reported elsewhere in the species’ range. These findings will improve identification of potentially suitable habitat to guide strategic conifer management and support future conservation planning for Pinyon Jays in Idaho. More broadly, we hope this work will improve

understanding of how habitat relationships may shift and provide information relevant to woodland and sagebrush management across the Intermountain West.

### **Birds, Fire, and Grazing: Connecting Rangeland Management Education to Bird Habitat on Working Lands**

**Andrew C. Kasner**, Katy Hoskins, Morgan Treadwell, X. Ben Wu

As a product of our involvement in the Climate Hub Partnership Agents of Change Education and Outreach Cohort 2, June 2025-May 2026, we developed an educational program focused on the use of fire and grazing as tools in rangeland management to control woody plant encroachment and for enhancing and conserving bird habitat, with presentations occurring April-June 2026. The program was adapted for multiple audience types, including a formal educational program given over multiple class days in three different rangeland/wildlife management college courses (introductory- to majors-upper level) at Angelo State University; a presentation at the Episcopal Grasslands Conference in Amarillo, Texas; a presentation at the Youth Range Workshop 2; and a presentation to a local birding group. In addition to lecture presentations and assigned reading, the college-level program included site-visits to area ranches in the Edwards Plateau of Texas with an active prescribed fire and bird research program to observe and explore the effects of fire and grazing on rangeland habitat and/or bird communities. Most other programs included a field-based component, and the local birding group was led on a birding field trip on one of the research ranches. Participants completed surveys before and after the programs, which allowed us to measure learning outcomes and changes in perspectives toward range management practices and bird habitat. Here we present an overview of the program approach, results from learning outcome surveys and participant feedback, and additional outputs from our participation in the Climate Hub Partnership.

### **Baseline Assessment of Saltmarsh Sparrow (*Ammodramus caudacuta*) Breeding Across Nine Rhode Island Salt Marshes to Guide Tidal Marsh Restoration Design and Adaptive Management**

**Alison R. Kocek**, Benjamin Gaspar, Samuel Miller, Nick Ernst, Jonah Saitz, Mackenzie Payne, Samantha E. Apgar, Suzanne Paton

Coastal salt marshes are high value habitats that provide ecosystem services such as improved water quality, storm protection, and fish and wildlife habitat. Many of New England's salt marshes have been negatively impacted by accelerated sea level rise and past anthropogenic activities which caused degradation of these marshes including vegetation conversion from meadow high marsh species to stunted low marsh species (*Spartina alterniflora*), dieback of vegetation, expansion of impounded water on the marsh platform, subsidence of the peat, and expansion of invasive *Phragmites australis*. Intervention through restoration is vital to maintaining healthy and diverse salt marsh as most marshes are beyond the ability to repair themselves in the timeframe necessary to keep nesting habitat available for at-risk fauna such as the Saltmarsh Sparrow (SALS). SALS nest near the ground in salt marsh grasses and are

highly vulnerable to nest loss due to flooding, a risk exacerbated in degraded salt marshes, and which has led to a 20-year extinction horizon. From 2023-2025, we surveyed 39 locations across 9 sites throughout Rhode Island using the Saltmarsh Habitat and Avian Research Program Rapid Assessment method to collect avian presence data through point counts, SALS breeding presence through capture or non-capture of females in breeding condition and/or young of the year, and SALS nest locations and nest characteristics through nest searching. The results of our findings are actively being used to guide restoration design and adaptive management to specifically support SALS nesting through assessment of restoration site placement and adjustment of restoration targets.

## **Using Google Earth Engine to develop interactive mapping tools for conservation planning**

**Jane M. Kunberger**, Melanie R. Colón, Ashley M. Long

Landscape-scale threats such as climate change and urbanization increasingly affect birds and their habitats, creating a need for tools that use geographic information systems (GIS) to guide conservation across broad spatial and temporal scales. Google Earth Engine (GEE) provides access to extensive remotely sensed datasets, fast cloud-based processing, and the ability to build web-based mapping tools (i.e., GEE Apps) that support data visualization and dissemination. We present two case studies demonstrating how GEE can be used to develop conservation planning tools. Our first case study focuses on seven Conservation Opportunity Areas identified in Louisiana's State Wildlife Action Plan as priority locations for Species of Greatest Conservation Need (e.g., Red-cockaded Woodpecker [*Dryobates borealis*]). Our second case study focuses on oak-juniper forests in the Edwards Plateau and Cross Timbers ecoregions in Texas, where species of conservation concern (e.g., Golden-cheeked Warbler [*Setophaga chrysoparia*]) face ongoing habitat loss and degradation. In both case studies, we used GEE to classify remotely sensed imagery, quantify land cover change, and build GEE Apps that integrate our results with publicly available datasets. We also incorporated functions to examine historic and projected land cover change, providing stakeholders with tools to identify priority areas for conservation. Our case studies highlight how researchers can leverage GEE to process large datasets, model land cover dynamics, and create user-friendly tools that enhance conservation planning and stakeholder engagement.

## **A decade of urban bird-window collision reports reveals strong seasonal and taxonomic patterns**

**Violet James Lange**, Ananias A Escalante, Maria Andreina Pacheco

Anthropogenic activity has caused significant declines in bird populations. Urbanization is considered a major factor, as glass-centric architecture and light pollution cause window collisions, killing over 1 billion birds across the United States annually. The city of Philadelphia, located along the Atlantic flyway, serves as a major hotspot for migratory birds and supports year-round residents. However, it also poses a high risk of window-collision fatalities. Here, we

analyze a longitudinal dataset of over a decade's worth of bird collision reports collected from a Philadelphia university, with over 1700 birds, from 11 orders and 90 species. The most common species documented were the Common Yellowthroat (*Geothlypis trichas*, 19.35%), White-throated Sparrow (*Zonotrichia albicollis*, 14.31%), Ovenbird (*Seiurus aurocapilla*, 9.33%), and American Woodcock (*Scolopax minor*, 5.85%). The collision reports showed a pronounced seasonal disparity, with fall migration (August – November) accounting for approximately 75.1% of total annual reports, compared with 19.2% from spring migration (March-May), and 5.7% from the inter-migratory period. This pattern aligns with post-breeding-season population expansion and the eastward shift in migrant traffic between seasons. Additionally, Parulidae (27 species), Passerellidae (12 species), and Scolopacidae (1 species) are disproportionately represented in the collision observations. An analysis utilizing abundance data (eBird) and ecological traits of these species will be done in the future to better understand their vulnerability to window collisions. This analysis highlights the diversity of species affected by window strikes, and a prominent seasonal pattern of collisions, serving as a pilot analysis for larger, city-wide scale analyses.

### **Genetic structure suggests mixed kinship in Palmchat (*Dulus dominicus*) compound nesting groups**

**Joshua B LaPergola**, Gavin M Leighton, Christina Riehl

Fine-scale genetic structure in animal populations can create opportunities for both kin-directed cooperation and kin competition. Knowledge of kinship is therefore key to understanding the selective pressures shaping sociality as well as the effects of social behavior on local genetic structure. Here we investigate patterns of relatedness in compound nests of Palmchats, a cooperatively breeding bird endemic to Hispaniola. Compound nests are large stick structures that contain separate nesting chambers attended by different breeding pairs and putative family groups (breeding pairs and non-breeding helpers); nests are occupied and maintained year-round. We captured and genetically sampled 102 Palmchats from 10 compound nests (range = 6-17 birds captured per nest) and genotyped them with 779 single-nucleotide polymorphisms. Both relatives and non-relatives were associated with compound nests: the majority of dyads were unrelated, but some dyads were consistent with first- or second-order kin relationships. Average genetic relatedness, though low, was higher within nests than between nests for all types of dyads (female-female, female-male, and male-male). Patterns of spatial autocorrelation revealed no association between relatedness and distance between compound nests for either males or females. The population exhibited weak (though significant) overall genetic structuring as measured by  $F_{ST}$ , indicating that low levels of genetic variance within the population existed between compound nesting groups. However, we detected no significant patterns of isolation-by-distance nor significant differences between the sexes. Groups of Palmchats using compound nests appear to be composed of kin and non-kin, suggesting that social nesting involves both direct and indirect fitness benefits.

### **Featherbrained AI: How Bad Bird Images Build Better Observers**

## **Ashley M Long**

As artificial intelligence (AI) tools become increasingly accessible, educators face the challenge of helping students engage with these technologies in ways that support—rather than short-circuit—core learning goals. I will present an activity that leverages AI image generation as a productive source of error to strengthen observational precision, avian topography vocabulary, and critical AI literacy in an upper-division ornithology course. In this assignment, students select a North American bird species and describe it using appropriate morphological terminology without naming the species. Using AI image generators, students create images based solely on their descriptions, compare them with reference photos, refine their descriptions, and repeat the process. The activity culminates in a written reflection analyzing prompt quality, biological accuracy, and the strengths and weaknesses of the AI tools used. Pilot testing revealed that students' early descriptions often lacked key topographic features, resulting in AI outputs with whimsical but biologically implausible combinations of traits—an ideal springboard for discussion. With iterative refinement, students produced more anatomically precise descriptions, even when the AI images themselves did not improve. Students demonstrated strong critical reasoning, noting when detailed descriptions yielded surprisingly accurate images and when tools hallucinated plumage patterns, misinterpreted scale, or flagged benign prompts. This activity uses AI's "featherbrained" outputs not as flaws, but as teaching opportunities. It offers a flexible and engaging framework for building observational skills, strengthening bird-morphology knowledge, and fostering responsible, thoughtful student engagement.

## **Understanding how frugivorous birds shape tropical forest recovery**

### **Nicole Lussier**

In tropical ecosystems, more than 85% of plant species rely on animal-mediated seed dispersal, making frugivorous birds central drivers of forest recovery. Fruit abundance, diversity, and phenology structure frugivore assemblages and their functional traits, ultimately shaping the formation of bird–plant interaction networks. In turn, assembling bird communities determine the quantity, spatial distribution, and species composition of dispersed seeds, influencing plant recruitment and the future resource landscapes that structure subsequent bird assemblages. Despite the importance of these processes, we still lack a mechanistic framework that explicitly links community assembly with the reassembly of trophic interactions and the ecological feedbacks those interactions generate across regenerating ecosystems. Therefore, this research leverages an experimental restoration initiative in the Chocó Rainforest of northwestern Ecuador to test how manipulating early successional vegetation influences the recovery and assembly of frugivorous bird communities and, in turn, seed dispersal network structure and vegetation recovery. By experimentally altering resource landscapes across regenerating plots, this work examines how bird–plant interactions emerge, reorganize, and scale up to influence broader community dynamics during succession. Thus far, after only two years of growth following restoration plantings, bird communities have shown pronounced compositional shifts. Early communities were dominated by granivores but are now increasingly

composed of pollinators, frugivores, and insectivores. Concurrently, interactions between frugivorous birds and fruiting plants have increased in frequency, with birds dispersing diverse fruiting plant species across the restoration landscape. Ultimately, this work demonstrates how frugivorous birds act as key architects of tropical forest recovery by linking bird community assembly with the regeneration of plant communities.

## **Using eBird data to answer place-based questions with a community partner in a field ornithology course**

**Maureen R McClung**

For my spring 2026 Field Ornithology course, I designed a class project that combined three major elements: formation of a community partnership, generation and use of eBird data, and exploration of a local research question. This effort was inspired by a Periclean Faculty Leadership Course Development Grant, a program that highlights participatory research that builds long-term community partner capacity. Our question centered around understanding the response of birds to a local five-year lake renovation project managed by the Arkansas Game and Fish Commission (AGFC). Students met with AGFC terrestrial and aquatic natural resource managers, pitched research proposals using eBird data, merged the best elements of the proposals into a unified protocol, and tested and refined the protocol for future use as the renovation project continues to completion. The learning outcomes of this project are many fold, but some of the most important include 1) a deeper understanding of the value of community science platforms like eBird and how scientists use these data, 2) engagement in the scientific process from study design to data analysis to communicating results, 3) exploration of the biology of species using local ecosystems and how management influences them, and 4) and opportunities to connect with and learn from conservation professionals.

## **Open habitats support breeding birds, but higher temperatures shift their activity at a prairie under restoration in Arkansas**

**Maureen R McClung**, Kacey A Davis, Max A Hooten, Emily A Jones, Isabelle Rose, Steven C Fowler, Noah L Wyatt, Kevin J Krajcir

Stone Prairie Wildlife Management Area in central Arkansas hosts high-quality grassland and woodland habitats, which have undergone expansion since the Arkansas Game and Fish Commission purchased the property in 2017 and introduced selective thinning and prescription fire. Since 2020, a MAPS banding station has operated there, allowing exploration of bird community response to management, which could manifest spatially or temporally. Our study used data from 2020-2025 to examine whether species richness, number of encounters, and activity patterns in the total community, habitat guilds (grassland, woodland, forest), and two focal species, Indigo Buntings (*Passerina cyanea*) and Kentucky Warblers (*Geothlypis formosa*), could be predicted by variables associated with management. We found canopy cover, and not time since burn or thinning treatment, was the most useful variable in predicting species richness, encounters, and NBIR (new bands + initial recaptures). Grassland bird richness,

encounters, and NBIR increased from 2020 to 2025. Time of activity, estimated by averaging the time of day when birds were encountered in nets (in mean minutes from sunrise), shifted to earlier in the day with increasing temperatures for the total community, forest guild, and grassland guild. Activity occurred later in the day with increasing canopy cover for the total community, woodland guild, and Indigo Buntings. Taken together, our results suggest that the conversion of existing forest into woodland and grassland at Stone Prairie supports grassland birds, however the combined impacts of increasing temperature and decreasing canopy cover over the years could narrow the window for essential daily activities, like foraging.

### **Sediment placement restores drowning marshes and Saltmarsh Sparrow (*Ammospiza caudacuta*) nesting habitat in Rhode Island**

**Samuel Miller**, Alison R. Kocek, Benjamin Gaspar, Nick Ernst, Kenneth B. Raposa, Jennifer White, Wenley Ferguson, Cathleen Wigand, Nia Bartolucci, Clemens Hug, Caitlin Chafee, Suzanne Paton, Thomas E. Kutcher

Sediment placement (SP) on tidal marshes, intended to mimic natural deposition processes, is an adaptive management strategy to maintain or increase marsh elevation under accelerating sea-level rise. By raising marsh surface elevations, SP aims to promote high-marsh vegetation to sustain marsh function, and benefit imperiled wildlife such as the at-risk Saltmarsh Sparrow (SALS), which relies on less frequently flooded marsh zones for reproduction. However, SP outcomes vary with geomorphic setting, baseline conditions, sediment thickness, and time since placement, and impacts to focal species, including SALS, remain incompletely understood. In 2023, we used a modified version of the Saltmarsh Habitat and Avian Research Program (SHARP) Rapid Assessment protocol to assess SALS (and other tidal marsh bird) site use and nesting presence at 4 sites in Rhode Island – John H. Chafee NWR, Ninigret Conservation Area, Quonochontaug, Sachuest Point NWR – which had received SP restoration at varying timescales within the past decade. We captured female SALS in reproductive condition and juvenile SALS at two sites, consistent with successful reproduction. Nests of SALS were found at 3 of the 4 sites directly on the footprint of SP, which has not been confirmed by previous studies. These findings show that SALS can begin nesting on sediment application sites as early as 5-7 years post-placement, in areas where the appropriate vegetation has established.

### **Impact of illegal pet trade on the survival of African great parrots and rescue-rehabilitation interventions in Nigeria**

**Chinedu Mogbo**, Akinola Rachael, Austin-Anigbo Tochukwu, Isaac Ituen, Fwangmun James Yakubu

The African grey parrot (*Psittacus erithacus*) is one of the most heavily traded CITES-listed bird species in the African international pet trade, largely due to its exceptional intelligence and remarkable ability to mimic human speech. Despite international trade bans and national protections, illegal capture and trafficking persist across its range, including in Nigeria. Since the 1970s, over 1.2 million wild-sourced African grey parrots have been traded globally, with an

estimated 40–60% dying before reaching markets due to stress, overcrowding, disease, and injury associated with capture and transport. This study assessed the impact of illegal pet trade on the survival of confiscated African grey parrots admitted for rehabilitation at the Green Fingers Wildlife Conservation Initiative between 2023 and 2025. Over the past 12 years, the organization has played a significant role in biodiversity conservation in Nigeria, particularly in combating illegal wildlife trade. In collaboration with Nigerian Customs and the World Parrot Trust, rescued parrots undergo rehabilitation before release into protected forest habitats. Between 2023 and 2025, 110 confiscated parrots were admitted; 40% (20 individuals) died during rehabilitation. Post-mortem findings revealed dehydration, emaciation, trauma, and respiratory fungal infections, including aspergillosis caused by *Aspergillus fumigatus*. These findings demonstrate that trafficking-related stress predisposes parrots to opportunistic infections and high post-confiscation mortality, underscoring the urgent need for stronger enforcement, improved handling protocols, and enhanced rehabilitation capacity.

### **High overlap, subtle differences: trophic niche structure in tropical resident birds**

**Kimberly Navarro-Velez**, Amanda D. Rodewald, Nina O. Therkildsen, Stephen J. Morreale

The foraging niche of tropical bird communities remains poorly understood, particularly how co-occurring species partition resources through diet and behavior. We asked: (1) how partitioned versus overlapping are diets among resident insectivorous birds, (2) how consistent these diets are across summer and winter seasons, and (3) whether variation in foraging behavior explains dietary shifts. Working in the Colombian Western Andes, we analyzed ~250 fecal samples from 21 insectivorous bird species using COI metabarcoding (ANML primers), integrating assignments from the MIDORI and COins reference databases through a curated, geography-informed workflow. We complemented this data with 4,000 foraging observations for a focal subset of resident warblers ( $n = 4$ ), recording foraging height, substrate, attack maneuvers, and other variables. We quantified dietary structure using overlap metrics and ordination, estimated niche breadth, and evaluated relationships between diet and behavior. Diets showed moderate to high overlap but were not dominated by a single prey group. Instead, multiple prey orders contributed substantially, and niche breadth varied among species. Differentiation increased at finer taxonomic resolution, suggesting that apparent similarity at coarse levels masks underlying trophic structure. Ordination analyses revealed continuous variation in diet composition rather than discrete clusters. Across seasons, most species exhibited high dietary overlap, indicating relatively stable core diets, although some showed compositional shifts consistent with flexible prey use. Foraging behavior varied among species, indicating potential behavioral mechanisms underlying dietary patterns. These results indicate that coexistence in tropical bird communities is structured not by strong dietary differentiation, but by subtle, behavior-mediated differences in resource use.

### **Born to Be City Slickers? Cavity Nesters in Urban Environments**

**Kiersten Newtoff**, Kevin Omland

Urbanization has been the cause of numerous species declines due to reduced food availability, loss of breeding habitat, and consistent noise masking communication. In these new environments many non-native species have dominated such as House Sparrows and European Starlings. An unlikely benefactor of the changed landscape are secondary cavity nesters, many of which have readily taken to nest boxes and are shielded from many predators. In 2025, we monitored over 200 nest boxes on college campuses and parks of varying degrees of public use. While mostly inhabited by Eastern Bluebirds, Tree Swallows and Northern House Wrens also use the nest boxes. Rates of occupation across sites were similar, but rates of predation differed significantly. The most common predator, black rat snakes, caused the loss of eggs and nestlings at greater rates in parks than college campuses. We hypothesize that the amount of mowed versus natural grass impacts predator abundance, resulting in mowed lawns leading to lower depredation. Our findings support that unconventional urban environments can serve as important habitat for secondary cavity nesters.

### **The number of human-simulated predators influences the escape behaviour of bird species in a West African protected area**

**Ngozi M Okafor, Soladoye B Iwajomo, Bukola DA Azaki, Shiiwua Manu**

Continuous human presence in protected and recreational areas can adversely affect wildlife. Birds perceive the approach by humans as predatory and mostly flee in response, which can be energetically costly, and leads to disruption of foraging activities and interactions with conspecifics. This study used Flight Initiation Distance (FID) to assess bird responses to multiple versus single human approaches. We examined how the number of persons approaching the study bird species influenced the relationship between FID and factors such as flock characteristics, habitat features, bird orientation and alert distance. A total of 668 FID approaches were conducted on ten bird species belonging to nine families at Rennajj fish farm, Jos, Nigeria. Our findings reveal that the number of persons approaching birds significantly affected their risk assessment and escape behaviour, as they initiated flight earlier when approached by multiple persons. Focal birds positioned on water and ground exhibited significantly higher FID values than those in the tree or shrub habitats, indicating high visibility and vigilance by birds on the ground and water. Furthermore, study birds fled at significantly shorter distances during three-person approaches when oriented backwards, implying an increased vulnerability to predators approaching from the rear. We conclude that the number of persons approaching the study bird species, and environmental and spatial cues, play significant roles in the threat perception of wild birds. These factors should be integrated into wildlife management to manage human disturbance effectively.

### **Planting birder seed: raising the next crop of community scientists in ornithology**

**Timothy O'Connell**

Automation in avian survey and population monitoring is increasing rapidly, but the bedrock data for avian conservation will continue to rely primarily on volunteer efforts of community scientists.

For example, long-term monitoring efforts such as the Christmas Bird Count and North American Breeding Bird Survey are almost entirely supported by participation from experienced birders skilled in basic bird identification. Increasingly, eBird is supplying data for avian research, and avid users contribute a disproportionate amount of those records. Never before has it been easier to rapidly gain skill in field identification and positive reinforcement from birding, but many established birders are loathe to mentor neophytes with emerging technologies that increase the pace of learning. In particular, the Cornell Lab of Ornithology's Merlin® Sound ID app has been polarizing as beloved by beginners but often scorned by the experienced as a source of misidentification and overconfidence among observers. Since 2011, my Ornithology classes at Oklahoma State University have spanned the pre- and post-Merlin® world and the pre- and post-COVID19 pandemic. Students use Merlin® to build confidence for self-guided eBirding throughout the semester, culminating in joint point counts with their instructor for a final field identification exercise. Merlin® plays an important role in helping students attain a class-average goal of 70% agreement in species lists in end-of-semester point counts.

### **Decoupling of bird migration from the changing phenology of spring green-up**

**Timothy J. O'Connell**, Ellen P. Robertson, Frank A. La Sorte, Jonathan D. Mays, Paul J. Taillie, Orin J. Robinson, Robert J. Ansley, Craig A. Davis, and Scott R. Loss

The green-up of vegetation in spring brings a pulse of food resources that many animals track during migration. However, green-up phenology is changing with climate change, posing an immense challenge for species that time their migrations to coincide with these resource pulses. We evaluated changes in green-up phenology from 2002 to 2021 in relation to the migrations of 150 Western-Hemisphere bird species using eBird citizen science data. We found that green-up phenology has changed within bird migration routes, and yet the migrations of most species align more closely with long-term averages of green-up than with current conditions. Changing green-up strongly influenced phenological mismatches, especially for longer-distance migrants. These results reveal that bird migration may have limited flexibility to adjust to changing vegetation phenology and emphasize the mounting challenge migratory animals face in following en route resources in a changing climate.

### **Tracking Fall Migration with Motus: The Fate of Surviving Window-struck Passerines**

**Cailin O'Connor**

Many species of North American passerines migrate along the Atlantic flyway in the fall to reach their over-wintering habitats in the southeastern United States, the Caribbean, and Central and South America. Birds face many perils along their journeys including collisions with buildings, which kill over one billion birds per year in the United States alone. Some birds survive impact and may continue their migration but their fates post-collision are unknown. These birds may suffer delayed mortality or show aberrant migration due to injuries; if so, overall mortality estimates from bird-building collisions are significantly underestimated. This research sought to understand if birds that initially survived collision events survived into the future and, if so, if they

successfully completed migration. In this novel project, radio transmitters were affixed to individuals from six species of passerines that had survived bird-building collisions in Newark, New Jersey, and to control birds from a nearby banding station. Their fall migrations along the Atlantic Flyway were tracked with the Motus Wildlife Tracking System, a radio telemetry network. Control and experimental birds migrated with similar success across all species, indicating that birds survived after collision events at the same rate as wild birds and that no significant long-term injury to these birds had occurred. There were also no significant differences between migratory path or timing of control and experimental birds. These results provide evidence that birds surviving building collisions are often successful in the wild post-strike and should not be added to overall mortality estimates.

### **Haemosporidian parasite diversity in Red-tailed Hawk populations of Northeastern North America**

**M. Andreína Pacheco**, Axl S. Cepeda, Erica A. Miller, Scott Beckerman, Mitchell Oswald, Nohra E. Mateus-Pinilla, Ananias A. Escalante

As top predators and scavengers, raptors are of great ecological importance; however, many species are vulnerable. Documenting their parasites and their effects on the host fitness is essential, as these birds are often infected by poorly defined haemosporidian species/lineages. Although haemosporidians (order Haemosporida, phylum Apicomplexa) are diverse and globally distributed as vector-borne parasites, few studies have characterized them in raptors. Using programs that manage raptors to reduce wildlife strikes at airports and sampling injured/deceased raptors from rehabilitation centers in the northeastern USA, 265 Red-tailed Hawk (*Buteo jamaicensis*) samples were collected and screened for haemosporidian parasites targeting the cytochrome b gene using a nested PCR. Additionally, near-complete parasite mtDNA genomes were obtained for several species/lineages using a PacBio protocol. Overall, 91 individuals tested positive for Haemosporida (34.3%), with 84.6% of those harboring mixed/co-infections. At least 15 species/lineages were detected with *Leucocytozoon* spp. infections being the most common (27.5%), followed by *Plasmodium* spp. (4.5%), and *Haemoproteus* sp. (2.6%). New lineages for *Leucocytozoon* were also detected. Identified species included *Leucocytozoon buteonis*, *Leucocytozoon mathisi*, *Plasmodium circumflexum*, *Plasmodium elongatum*, and *Haemoproteus multivacuolatus*. This study represents the first report of *H. multivacuolatus* in North America. This parasite belongs to the *Haemoproteus nisi* group, a recently described clade in Europe, exclusive to Accipitriformes, that diverged from other *Haemoproteus* and *Leucocytozoon* parasites. This research significantly expands our understanding of haemosporidian biodiversity and distribution within North American raptor populations.

### **Reliable Thresholds, Reliable Inference: Calibrating Deep Learning Models for Passive Acoustic Monitoring for Community-Scale Bird Monitoring**

**Pooja Panwar**

Passive acoustic monitoring (PAM) combined with deep learning offers unprecedented opportunities for large-scale biodiversity monitoring, yet the reliability of automated species detection for ecological inference remains poorly understood. A central challenge is converting species predictions into reliable detection data by selecting appropriate confidence score thresholds. We evaluated the stability, validation requirements, and generalizability of precision-based confidence thresholds (targeting 90% precision) derived from BirdNET, one of the most widely-used deep learning models for avian acoustic classification. Using multi-year PAM data from 104 recording locations across four forested study sites in the northeastern United States, we analyzed 141 bird species and addressed four key questions: (1) Can we reliably estimate thresholds for species within an avian community, and which species characteristics prevent threshold estimation? (2) How sensitive are thresholds to validation effort? (3) Are thresholds transferable across geographically distinct sites? (4) Do recording device differences affect threshold estimates? We found that 97 of 141 species had sufficient true detections to estimate 90% precision thresholds, with 77 species (~80%) yielding stable thresholds. Threshold uncertainty declined predictably as validation effort increased. We found that thresholds varied significantly across study sites, indicating limited transferability within our study area, even within the same region. Differences in recording devices significantly affected threshold estimates. Threshold uncertainty propagated substantially to downstream ecological inference, affecting total detections and naïve site occupancy estimates. Our results provide practical guidance for implementing precision-based filtering in community-level acoustic monitoring, emphasize the importance of adequate validation effort and standardized equipment, and highlight inherent limitations of deep learning models for rare species.

## **A southern perspective on bird molt: insights from bird banding in the temperate Neotropics**

**Martín E Pérez,** Pablo G Brandolin

Feather molt is a fundamental component of avian life-history, yet it remains poorly documented for many species in the temperate Neotropics. This lack of information limits reliable ageing in the field and constrains long-term monitoring programs. Bird banding station programs, however, provide opportunities to document molt strategies across multiple species. Here, we described molt timing, duration, and extent for 10 common bird species in central Argentina, within the temperate Neotropics. Using multi-year capture data, we characterized preformative and prebasic molts and evaluated morphological traits for sex determination. We confirmed the area as a molting ground for nine species, except for the migratory *Elaenia albiceps*. Eight species exhibited temporally restricted molt periods toward the end of the breeding season in late summer. In contrast, the year-round resident *Columbina picui* showed a prolonged molt period spanning several months. Preformative molt extent varied across species, ranging from partial replacement of body feathers to more extensive, complete molts including flight feathers. Five passerine species exhibited the partial molt extent; the three migratory tyrant species exhibited an incomplete extent with an eccentric replacement pattern, and *Sporophila caerulea* and *C. picui* showed a variable extent. Morphometric analyses indicated that the wing chord was longer in males than females across all species, although overlap between

sexes limits its reliability as a sole sexing criterion. The identified patterns will facilitate field-based age and sex determination, thereby enhancing bird monitoring programs. Furthermore, it will enable comparisons with molt patterns of temperate species in the Northern Hemisphere.

## **Migratory Ecology of Wilson's Snipe**

**Kevin Perozeni**, Ashley M. Long

Migratory shorebirds are experiencing global population declines, driven primarily by habitat loss, habitat degradation, and climate change. Despite these threats, the movement ecology of many shorebird species remains poorly understood, limiting our ability to develop effective conservation strategies for these taxa. Wilson's Snipe (*Gallinago delicata*; hereafter snipe), is a widespread and legally hunted North American migratory shorebird that faces multiple threats across its broad range and are understudied everywhere they occur. Our objective was to examine the movement ecology of snipe that overwinter in Texas and Louisiana. Between December 2024 and March 2025, we used nocturnal spotlighting to capture 67 overwintering snipe at five sites and attached GPS transmitters to 35 individuals to quantify the timing, duration, and location of their movements within and across seasons. Our data revealed novel insights into flight speeds during migration (55–128 kmh); nightly (150–1,200 km) and cumulative distance traveled (>6,000 km); and altitude during migration (50–4,000 m). We also documented their migratory pathways and found evidence of site fidelity to stopover locations for some individuals. Our research provides data to inform management for this unique migratory game bird and information to help predict how snipe may respond to future changes in land use or environmental conditions. Moreover, our project offers a unique opportunity to engage landowners, hunters, and birders in shorebird conservation.

## **Heterogeneous urban environments result in heterogeneous bird vocalizations**

**Kaiya Provost**, Audrey Cozine, Valeria Lopez, Shana Caro

Bird vocalizations are an important part of avian survival and reproduction, but they also allow individuals and species to be detected. In particular, autonomous recording units can be deployed remotely to allow for long-term collection of bioacoustic data with minimal human labor. Here we present work resulting from bioacoustic monitoring of six sites in the highly urbanized Nassau County, NY. From November 2024 to December 2025, we detected over 100 million individual birds across 53 recording units, comprising over 150 unique species. For migratory birds, we quantify when they arrive and track the vocal phenology through time as they breed. We also show that there are species composition differences between the six sites, which vary in terms of their habitat, anthropogenic influence, and noise pollution. Lastly, we investigate the impact of distance to highways and train lines on vocal properties in seven species. In one bird, the White-throated Sparrow, preliminary results indicate that wintering individuals vocalize at lower frequencies the more noise pollution they experience. In the other six species, no such relationship was found. Future work on the system will investigate how

migrant and resident bird species in Nassau County differ in their responses to intermittent noisy disturbances, like trains. This body of work shows the complexity of species responses to environmental factors in a highly urbanized county.

## **Exploring the physics of flight using competition and the scientific method**

**Letitia M Reichart**

Exploring avian flight in an ornithology course provides an opportunity to learn about the forces that act on flight and the different structures of avian wings. In this activity, students first learn about the four major forces: thrust, lift, drag, and gravity. We also explore the concepts of high and low wing loading, and high and low aspect ratio wings. Students then work as a team to design both a low and high aspect ratio paper airplane. Following multiple test flights and design adjustments, student teams then participate in friendly competition to hopefully earn a prize. Data is collected for the following categories: distance flown, time spent aloft, speed, and area of the wings. Following data collection, the class analyzes the data for each plane and explores the relationships between high and low aspect ratio wings. We then interpret the data with respect to flight in real birds to learn about differences in functionality of each wing type and how differences allow birds to be adapted to their specific habitats. Overall, students demonstrate a better understanding of the physics of flight following this lab activity and have fun learning with their peers.

## **Protecting Magellanic Plover in Austral Patagonia: Evaluating Predator and Anti-Trampling Exclosures**

**Ignacio Roesler**, Gastón García, Violeta Lang, Leandro Sosa, Lucas Hormachea, Ezequiel Brea, Patrick Buchanan, Emanuel Tiberí, Laura Fasola

The Magellanic Plover (*Pluvianellus socialis*) breeds in highland plateaus of Austral Patagonian where habitat transformation associated with climate change, sheep trampling, and predation may limit reproductive success. During the 2023–2024 breeding season, we surveyed 350 lakes to establish a management baseline, installed two nest exclosures, conducted 72 h of focal behavioral observations. In 2024–2025, we expanded protection by installing six exclosures (90.6 h of focal observations). In 2025–2026, we installed three additional exclosures and monitored two non-protected nests with camera traps. Exclosures were modified from predator-exclusion systems developed for Piping Plovers and consisted of galvanized mesh cylinders (3 m diameter x 1.5 m height) anchored with iron stakes and covered with a nylon mesh roof, with two camera traps deployed per nest. All fieldwork was conducted at Strobel Lake Plateau, Santa Cruz Province, Argentina. In 2023–2024, we detected 83 adults, 10 nests, 11 chicks, and 11 juveniles and documented predation of three unprotected nests by Culpeo Fox. Both exclosures were successful. In 2024–2025, eight nests were detected, six protected; three enclosed nests were successful (failures due to flooding, extreme windstorms and abandonment), whereas the two unprotected failed. Sixteen juveniles were banded. In 2025–2026, one exclosure was successful, another was likely successful, and one failed

following raptor predation on an adult; ten chicks were banded. No banded juveniles have been re-detected, suggesting greater-than-expected dispersal or low detectability across this extensive landscape. These multi-year results indicate that exclosures can enhance hatching success.

### **Hand-rearing of the Hooded Grebe: Summary of a fundamental strategy for its conservation**

**Ignacio Roesler**, Gabriela T. Gabarain, Laura Fasola, Bettina Mahler, Patrick Buchanan, Gabriel Celedon, Ianina Godoy, Santiago Hernandez Barricarte, Julio Lancelotti

The critically endangered Hooded Grebe (*Podiceps gallardoi*) has a current population of fewer than 700 mature individuals. Therefore, one conservation strategy is ex situ rearing, since 97.4% of clutches abandon the second egg. Rescuing these eggs and raising chicks in captivity could help maximize annual recruitment. For the past nine years, we have been working to develop an effective hand-rearing protocol to strengthen the population by releasing these captive-bred individuals. We have evaluated various variables that could affect hatching success and survival: stage of incubation at the time of collection, transport duration, incubation protocol (temperature and humidity), daily egg weight loss, chick care frequency (feeding and swimming), time to the first post-hatching assistance, and type of food. During the first six years, the maximum survival reached only 6 days (145 hours). In the following two breeding seasons (2021/2022 - 2022/2023), we obtained survival times of 25, 15, 14, 12, and 10 days (570, 366, 338, 291, and 245 h, respectively). This significant increase in survival was linked to two main factors: early chick care (starting 10 minutes after hatching) and increased chick care frequency (every 30 minutes, 24 hours a day). Next season (2023-2024) due to the lack of Hooded Grebe colonies, we successfully raised three Silvery Grebes (*P. occipitalis*), a closely related species with similar habits. After that (2024-2025), we implemented the protocol used with the Silvery Grebes and successfully raised three Hooded Grebes, which were released into the Santa Cruz River estuary. The chicks were observed one month after release alongside a group of adult Hooded Grebes. This management strategy could be key to reversing the critical situation of the species.

### **Impacts of ticks and forest management on Appalachian breeding birds**

**Anna M. Rose**, Stephen N. Matthews, Risa Pesapane, Matthew Shumar, Christopher M. Tonra

Eastern forest bird communities have lost over 17% of their species' biomass since the 1970s. Ohio historically is a stronghold for breeding birds; however, land-use changes and shifting disturbance regimes have altered forest conditions. Informing forest management on how silvicultural treatments impact bird communities and how forest conditions are changing, such as the increased abundance of ticks on the landscape, is essential knowledge for balancing forest productivity with avian conservation. The study looks to improve the understanding of relationships between nesting Appalachian birds (Wood Thrush, Ovenbird, Hooded Warbler, and Red-eyed Vireo) and abundance of ticks. Given vertical stratification of tick questing height,

bird nest height and foraging height was predicted to correspond to tick loads on adult parents and their nestlings. Tick loads from 141 nestlings and 45 adults of seven species showed that ground-nesting and ground-foraging species were more likely to have ticks present on adults and their nestlings. Nest success, quantified by daily survival rate (DSR), was also impacted by tick parasitism. In addition to tick parasitism, expanding gap harvests designed to promote forest climate resilience also significantly reduced Wood Thrush territory density and DSR. This study takes a first step to simultaneously explore how silvicultural treatments impact both bird and tick populations. In an era of accelerating landscape change, exploring how eastern forest birds are influenced by processes, ranging from shifting disturbance patterns to increasing tick infestation, provides insight towards unraveling complex ecological systems that encircle forests, birds, and humans.

### **The Flocks Project: Affinity Groups Building Community in Ornithology**

**Anna M. Rose**, Ashley Dayer, Nathan Thayer, Kristen M. Covino, Tim O’Connell, Jennifer Smith, and Dai Shizuka

We all need a space to feel we belong and where we are supported. This is what the Flocks Project aims to achieve for ornithologists. For the past three years, the three professional ornithological societies have been working together in developing affinity groups—or “Flocks”—to create spaces for ornithologists to gather with similar experiences and backgrounds, and to share resources, network, and provide support for each other. The Flocks Project seeks to improve retention in the ornithology field by building stronger communities through these Flocks that are centered around different backgrounds and experiences. In June 2025, the Flocks Project launched its first six Flock cohorts, including the Rainbow Flock, Silk Road Ornithologists, SANDerlings (Supportive Association for Neurodivergence/Disability), Los Colibríes, Black Sunbird Alliance, and Flight Paths. In one year since their founding, the six Flocks rose to over 310 members, created a team of 14 ‘Flocks Conference Organizers’ to plan events at the AFO-WOS and AOS conferences for 2026, and formed a Flocks Council in April 2026 to encourage collaboration between the six Flocks. Attend to learn more about the current Flocks Project affinity groups, how individual Flocks are structured and formed, how Flocks benefit our community, and their goals for the future. By the end of the meeting, you may have been convinced to join a Flock!

### **Resource selection of White-winged Doves breeding across urban gradients in Texas, USA**

**Megan E. Spina**, Marianna M. Wharff, Owen N. Fitzsimmons, Jordan C. Giese, Jennifer A. Smith

Since the 1980s, White-winged Doves (*Zenaida asiatica*) in Texas have greatly expanded their range beyond their historic breeding grounds in the Lower Rio Grande Valley (LRGV) and now predominately breed in urban areas in most of the state. However, the effects of urbanization on this economically important game species are unclear, posing management challenges. The

objective of this study was to investigate how urbanization affects home range size and resource selection of breeding White-winged Doves. We predicted that home ranges in suburban areas would be smaller compared to those in urban and rural areas due to the prevalence of mature trees and bird feeders that allow for reduction of space use. We also predicted that doves in urban areas would select residential and green spaces due to access to bird feeders and foraging grounds, and that birds in rural areas would select for crops to facilitate foraging. Between May and August 2025, we fixed GPS-GSM solar-powered transmitters to 76 doves across Houston and San Antonio, and in a state park in the LRGV, which served as a control site. We constructed 95% kernel density home ranges and evaluated resource selection using compositional analysis. Preliminary results support our hypotheses that White-winged Doves select for residential and green spaces. In contrast, home range sizes were highly variable across urban gradients ( $29.66 \pm 15.87$  km<sup>2</sup>). Our results will improve understanding of the breeding ecology of White-winged Doves in Texas.

### **Bioacoustic indices from soundscapes correlate with Amazonian rainforest patch size, but not very well**

**Philip C Stouffer**, Erik I. Johnson, Lucas W. Rot

Bioacoustic indices generated from passive soundscape recordings have been proposed as a method to assess acoustic communities, especially as a proxy for habitat quality. The value of indices has typically been confirmed by showing a positive relationship between the index and the number of species detected in the same recording, ignoring the limitation that the recording itself is an incomplete sample. We assessed the effect of rainforest patch size on five common indices calculated from 403 recordings made in 11 fragments of 1, 10, and 100 ha and two continuous forest sites at the Biological Dynamics of Forest Fragments Project in Amazonian Brazil. We also compared indices with simultaneously collected lists of birds captured or detected visually or aurally (daily list). Daily list species richness was strongly associated with fragment size class, with >4 times as many species in continuous forest than in 1-ha fragments. Despite overwhelming fragment size effects on birds, indices showed much weaker patterns, possibly due to other biophony. Three indices (BI, ADI, and AEI) conformed to expectations based on fragment size. A random forest model correctly placed 86% of daily list samples in the correct fragment size class, compared to only 47% of acoustic samples. Further, indices were only weakly correlated with richness from the same day's daily list, which we consider an accurate assessment of the birds present that day. Passive recordings may prove more useful for bird monitoring based on identifying species rather than through bioacoustic indices, especially as AI species identification improves.

### **Breeding Status and Subcolony Membership Predict Foraging Space Use in Great Black-backed Gulls**

**F Dylan Titmuss**, Kristen M Covino, James T Pokines

Despite significant population declines of more than 45% globally and nearly 70% in North America since 1985, the movement ecology and foraging behavior of Great Black-backed Gulls (*Larus marinus*) remain substantially understudied. As such, this project examines the patterns and drivers of individual variation in Great Black-backed Gulls' foraging habitat use during the breeding season. In May 2025, twelve adult Great Black-backed Gulls breeding on Appledore Island (Maine, U.S.A.) were fitted with solar-powered tracking devices, recording high-frequency location data through the following months. Individual breeding-season foraging ranges were estimated using autocorrelated kernel density estimation via continuous-time movement models. Breeding status was a strong predictor of foraging space use: failed breeders showed higher pairwise overlap with one another than active breeders did among themselves, with active–failed pairs showing the lowest overlap. Additionally, nest site appeared to shape foraging destination: active breeders from the same subcolony showed more similar patterns of foraging habitat use with one another than with individuals from other subcolonies, perhaps suggesting a subcolony-level knowledge of foraging sites shared among individuals. Ongoing metabarcoding analysis of diet samples collected concurrently will allow us to assess whether subcolony membership is reflected in dietary differentiation, providing a more complete picture of foraging niche partitioning in this declining species.

### **Use of anthropogenic foraging cues in urban American crows**

**Andrea Townsend**, Margaret Merz, Sophie Cote, Rachel Weinberg, Timary Malley

Behavioral flexibility and the ability to respond appropriately to anthropogenic cues that signal potential threats or rewards may promote success of wild animals in the urban environment. Here, we examine the behavioral responses to anthropogenic cues of free-living American crows (*Corvus brachyrhynchos*), an opportunistic scavenger and common urban exploiter. Specifically, we tested the hypotheses that crows would more readily approach (1) novel objects and anthropogenic food when in close proximity to trash cans, and (2) paper bags with hidden food rewards when closer to a McDonald's restaurant, due to their associations of food with these cues. In addition, we examined the preference of crows for bags marked with a McDonald's logo versus unmarked bags, hypothesizing that crows closer to McDonald's would be more likely to approach the labeled bag because of its familiarity. Consistent with our expectations, crows exhibited a lower approach latency to anthropogenic food and novel objects in close proximity to trash cans. Likewise, they were more likely to approach paper bags when in proximity to a McDonald's restaurant, but they showed no preference for bags with a McDonald's logo. Overall, we found evidence that the foraging behavior of crows varied in the presence of specific anthropogenic cues and that these responses depended on their probable cue familiarity. Their ability to use anthropogenic cues specific to the local environment, combined with their exploitation of human food resources, likely contributes to the success of the American crow in the city.

### **Uncovering the Activity Patterns of Northern Saw-whet Owls on their Wintering Grounds**

**Adeline Volz**, Michael Ward, Michael Avara

Despite being one of the most commonly banded raptors in North America, the behavior and activity patterns of the northern saw-whet owl (*Aegolius acadicus*) remain poorly understood. Northern saw-whet owls prey on small rodents, but little is known about the specifics of their activity; under what conditions, times, and locations are they the most or least active? A long-term banding station operates at the University of Illinois Urbana-Champaign, where Motus transmitters are deployed on birds to study their migratory pathways and overwintering behaviors. With our sample size of approximately  $n = 100$  tagged owls, we used a network of six Motus towers within the confines of our study sites, Kennekuk County Park and the neighboring Kickapoo State Park in Danville, Illinois, to uncover activity patterns linked to prey abundance and activity, moon phase, and temperature. Activity often peaked during early dawn and late dusk, indicating a crepuscular rather than strictly nocturnal species. Our research has indicated a positive correlation between owl and rodent activity and a negative correlation with moon brightness. The patterns uncovered largely align with the ecology of northern saw-whet owls and their prey, adhering to the landscape of fear model. However, these relationships have yet to be described using a dense Motus network and our specific methods. Our findings establish a behavioral baseline for an understudied species and demonstrate the utility of Motus towers for revealing finer-scale activity patterns in migratory raptors.

### **The effects of urbanization on migratory and non-migratory movements of White-winged Doves**

**Marianna M. Wharff**, Megan E. Spina, Owen N. Fitzsimmons, Jennifer A. Smith

The White-winged Dove (*Zenaida asiatica*, hereafter dove), a migratory gamebird historically confined to the Lower Rio Grande Valley (LRGV) of Texas, has undergone a dramatic northward range expansion over the past fifty years. Over the same period doves have increasingly selected urban environments for nesting. Previous studies suggest that urban doves have become partially migratory, but the effects of urbanization on the propensity to migrate and other post-breeding movements of doves remain unknown. To address this knowledge gap, we fitted 76 after-hatch-year doves (urban  $n=27$ ; suburban  $n=22$ ; rural  $n=17$ ; control  $n=10$ ) with GPS telemetry devices between June-August, 2025 across urban-rural gradients in San Antonio and Houston and at a traditional breeding site in the LRGV that served as a control. We predicted that individuals captured in urban areas would be less likely to migrate than their rural counterparts due to the abundance of ornamental trees and supplemental feed. Data collected through February 2026 suggested variation in post-breeding movements, with eleven individuals migrating to southern Mexico. Of these, seven originated from the LRGV, four from San Antonio, and none from Houston. Others remaining close to capture locations exhibited variability in dispersal distance and direction post-breeding. By improving understanding of the impacts of urbanization on the post-breeding movements of doves, our results will serve to inform management plans for this gamebird in Texas and surrounding states while simultaneously providing insight into adaptations of wildlife to urbanization.

### **Using “virtual ecology” approaches to improve avian point count study design**

**SK Winnicki**, Laura J Kearns, Matthew B Shumar, Christopher M Tonra, Stephen N Matthews

Predictive models of bird abundance allow us to estimate population size, illustrate temporal changes in populations, and identify habitat associations. However, limited sampling can produce inaccurate and imprecise models; producing useful estimates requires thoughtful sampling design. The upcoming third Ohio Bird Atlas (2028-2032) will include roadside point count surveys of breeding birds across the state, to generate abundance estimates that can be compared to analyses of survey data collected during the second Ohio Breeding Bird Atlas (2006-2011). To best use resources during the Atlas, we implemented a “virtual ecology” approach, simulating different point count sampling designs before data collection using species- and habitat-specific data from the second Atlas dataset (n=14,347 point counts). We used multinomial-Poisson time-removal mixture models with satellite landcover covariates to estimate abundance and detection probability for 28 species representing various habitats and regional distributions in the state, and ranked these models by AIC. These top models allowed us to make condition-specific abundance and detection estimates for each physiographic region in Ohio by incorporating the median landcover data for the region (i.e. median percent forest or pasture cover). We then simulated point count study designs ranging from n=500–20,000 counts to estimate how many would be needed to accurately and precisely estimate these abundance values for each species in each physiographic region in the state. We will discuss the optimal study design for a few highlighted species, and consider the pros and cons of using this method for planning point count projects at smaller scales.

### **Fire and Birds – A web-based authentic inquiry project for introductory ecology class**

**X. Ben Wu**, Carmen Reisdorf, Justin Wied, Andrew Kasner

Authentic inquiry provides high-impact learning experiences, and web-based inquiry projects make this pedagogy accessible and scalable for introductory science classes of any size. We developed a web-based inquiry project, “Fire and Birds,” that uses output from the AI avian species classifier BirdNET to investigate how prescribed fire influences bird communities in savanna landscapes of the Edwards Plateau, Texas. Students learn to interpret spectrograms through scaffolded activities and use them to identify vocalizations of five common bird species. They formulate a testable hypothesis about patterns in bird relative abundance based on observations of spectrograms of recordings from plant communities with different burn histories and then design methods and collect and analyze data from audio clips and spectrograms in a Zooniverse citizen-science project to test that hypothesis. Each student writes an inquiry report, participates in rubric-based peer review, and revises their report based on peer feedback and self-assessment. We piloted this inquiry project in an online introductory ecology class in Fall 2025. Pre- and post-surveys showed significant gains in students’ self-reported ability to formulate testable hypotheses, understand how ecologists conduct research, and evaluate the quality of scientific reports. Students described the project as feeling like “real” scientific research with authentic data and analyses, particularly valuing work with spectrograms and bird sounds and the opportunity to formulate and test their own hypotheses. Some reported that the

experience changed how they see birds and rangelands and reshaped their understanding of fire and grazing as key ecological processes.

### **Feature counter-stereotypical scientists in curricula with the Biologists and Graph Interpretation (BioGraphI) Project**

**Suann Yang**, Rachel M. Pigg

Biology students can benefit from being introduced to relatable role models; however, textbooks generally lack representation of contemporary and counter-stereotypical scientists to whom our students can relate. BioGraphI modules are lessons we have designed to fill this gap, addressing graph and data interpretation skills along the way. BioGraphI modules include video interviews with counter-stereotypical scientists, allowing students to hear directly from the scientists about their discoveries. In this presentation, we'll illustrate the components of a BioGraphI module and review the modules that have been produced thus far, highlighting content coverage that can apply to the field of ornithology, as well as areas yet to be covered. We'll also summarize the identities of scientists who have been featured in these modules, and compare this representation to that of commonly used textbooks. We hope to inspire instructors to adapt our modules for their classes and to encourage ornithologists to collaborate with us to co-author BioGraphI modules, thereby continuing to expand the range of counter-stereotypical identities and biological research areas addressed by our curricula.

### **The song of a flockmate, the threat of a rival: heterospecific vocal cues and territorial responses in Amazonian flocks**

**Danny Zapata**, Jose Miguel Ponciano, Scott K. Robinson

Mixed-species flocks are a prominent feature of tropical forest bird communities, yet the mechanisms coordinating interactions among species within these associations remain poorly understood. In Amazonian forests, many insectivorous birds participate in stable mixed-species flocks that jointly occupy and defend territories. While territorial responses to conspecific signals are well documented, it remains unclear whether species also respond territorially to vocalizations of closely associated heterospecific flock members. We tested whether heterospecific signals can elicit territorial responses in flock participants using playback experiments involving three core flock species: *Thamnomanes ardesiacus*, *Myrmotherula axillaris*, and *Myrmotherula longipennis*. Songs of each species were broadcast within flock territories, and responses of focal individuals were quantified by measuring song rate, latency to respond, and approach distance. Playback experiments revealed strong heterospecific responses by *M. axillaris*, which frequently sang during playback of *T. ardesiacus*. This pattern suggests that individuals may interpret heterospecific songs as indirect cues indicating the likely presence of an invading conspecific. By responding to such cues, birds may detect and confront territorial threats before direct conspecific signals occur. These findings highlight the potential role of heterospecific vocal information in mediating territorial behavior and regulating spatial

organization within cooperative multispecies associations. Such information networks may represent an important but underappreciated mechanism structuring tropical bird communities.

## Poster Presentations

(Listed by poster number)

### **1 Do Size and Plumage Dimorphism Correlate with High Territoriality in Female Kingfishers?** Paige Hollander, Julia Gebeck, Daniel Goldberg

Striking plumage of kingfishers is most notable for its observational brilliance, yet these structural colors – along with size differences between males and females – have been linked to a variety of evolutionary pressures, including both natural and sexual selection. Female-biased sexual size dimorphism (SSD) has been studied in raptor species and correlated with increasing levels of territory defense, but this link remains poorly studied in other birds, especially those in which the sexes differ in both size as well as feather coloration. We investigated how kingfishers may be a model for testing how territoriality is shaped by SSD and plumage dimorphism, as the family Alcedinidae varies considerably in whether males or females are larger and more colorful. As female kingfishers aggressively defend territories alongside males, we hypothesized that year-round territory defense is positively correlated with females being more colorful than males (female-biased plumage dimorphism) as well as female-biased SSD. We also sought to shed light on the evolution of the colorful breast band that occurs in males and females of some species. In our comparative analysis of 70 kingfisher species using data from the published literature and phylogenetic reconstructions, we found that sexual dichromatism was significantly correlated with year-round territory defense and SSD. Breast bands were linked to sexual dichromatism only in non-phylogenetic analysis. Future studies should investigate how male and female kingfishers vary in their territorial behaviors, and whether female size and coloration are shaped by pressures beyond sexual selection, perhaps natural selection for taking larger prey, like in raptors.

### **2 Non-breeding Season Spatial Use and Behavior of Eastern Bluebirds (*Sialia sialis*) in Maryland** Alan Reich, Kevin Omland

Eastern Bluebirds (*Sialia sialis*) are a cavity-nesting songbird species whose reproductive success is aided by artificial nest boxes. The majority of literature on Eastern Bluebirds reports on research conducted solely during the breeding season. However, birds in temperate zones spend more than half of their lives in transitional seasons and overwintering. Eastern Bluebirds can be found year-round throughout much of their breeding range. They are in high competition with conspecifics and other cavity-nesting species for access to breeding cavities during the breeding season. If breeding sites are proximal to suitable overwintering habitat, one adaptive strategy may be to maintain occupancy of nesting areas throughout winter to avoid competition

early in the breeding season. I conducted a pilot study in 2025 to track Eastern Bluebirds on a local scale through the entire non-breeding season. Using radio telemetry and resight surveys, I gathered GPS locations at regular biweekly intervals and mapped spatial use. The majority of radio-tagged individuals remained remarkably close to nest boxes they were known to have used in the prior breeding season for the entire non-breeding season. Many winter flocks consisted of parents and offspring. I observed potential territorial and prospecting behavior around nest boxes in all seasons. I will continue this work in 2026 with a larger number of individuals and expanded radio tracking. This work exemplifies the study of full annual cycle biology in a resident cavity nesting songbird, a crucially important focus in a time of climatic uncertainty and widespread declines.

### **3 Chick Growth and Survivorship in Great Black-backed Gulls (*Larus marinus*)** Stella Risinger, F. Dylan Titmuss, Nichola Hill, Kristen M. Covino

Chick growth rates and survival rates are key indicators of population productivity and overall health in seabird populations. Variation in these metrics can serve as early warning signs of population stress or decline. In this study, we examined the growth and survival of Great Black-backed Gulls (*Larus marinus*) chicks to evaluate how nest proximity to human activity, hatch date, and hatch order within a nest influence chick performance. We monitored 38 nests of banded adults during the breeding season and tracked chick size and weight between hatching and fledging, an approximately 45-day period (n = 38 nests). At fledging, all surviving focal individuals were banded. We predicted that increased exposure to human activity and later hatch dates would negatively affect chick growth and survivorship, and that chicks hatching earlier within a clutch would have higher growth and survival rates than later-hatching chicks. In asynchronously hatching species, earlier-hatched chicks often gain a competitive advantage over their siblings, resulting in higher growth rates and survivorship. Additionally, tradeoffs between intra- and interspecific competition across the hatching period, as well as disturbance from human activity, may further influence chick development. Preliminary results indicate consistent differences in initial mass and growth and survivorship among siblings within nests; however, nest proximity to human activity showed no apparent negative effects on chick growth or survival. These patterns will be further investigated through continued statistical analysis of the growth and survivorship data, and results will be presented.

### **4 Beyond the Cordgrass: Quantifying Winter Habitat for Two Imperiled Marsh Birds** Tabitha W. Olsen, Trey Barron, Christopher J. Butler

The Eastern Black Rail (*Laterallus jamaicensis jamaicensis*) and Yellow Rail (*Coturnicops noveboracensis*) are marshland species of conservation concern with most winter habitat associations drawn from either purely descriptive accounts or assumptions from the breeding season. During the winter and early spring of 2023-2024, we conducted call-playback and drone thermal imaging surveys across n=69 points along the Texas Gulf Coast and paired these surveys with detailed vegetation sampling with a goal of ranking habitat structural gradients against vegetative taxonomic composition. We summarized vegetation composition using non-metric multidimensional scaling and alpha diversity and summarized habitat structure using

principal components analyses. We evaluated species-specific occupancy using single-season and stacked multi-year occupancy models that accounted for survey method and ranked models with Akaike Information Criterion (AIC) values. Black Rail occupancy was strongly associated with the structural complexity/biomass gradient (PCA2): 2024 models including PCA2 received the greatest support (AIC weight = 0.877) with occupancy increasing significantly with PCA2 ( $\beta = 1.30 \pm 0.417$  SE,  $p = 0.0019$ ) a relationship that was further supported by the top-ranked stacked model ( $\beta = 0.65 \pm 0.21$  SE,  $p = 0.002$ ). Yellow Rail occupancy showed strong interannual variation and drone surveys substantially increased detection odds ( $\beta = 4.78 \pm 0.61$  SE,  $p < 0.0001$ ). Our results indicate that winter Black Rail occupancy in Texas is primarily structured by habitat complexity rather than plant taxonomic composition, whereas Yellow Rail occurrence may be temporally dynamic. Our findings highlight the importance of structural marsh attributes for Black Rail conservation during the nonbreeding season.

### **5 Habitat Improvement and stopover success of migratory birds in an urban microforest**

Wren Logan, Kathleen Farley, Julián Rondón Rivera, Mirko Schoenitz, Claus Holzapfel

A significant gap in stopover ecology research is understanding how different landscapes meet migratory birds' needs during pre-breeding and post-breeding migration seasons. A long-term bird banding study at Rutgers University in Newark, New Jersey, addresses this by examining the impact of habitat improvement on urban microforests supporting migratory birds during stopovers. Data on stopover duration and percent mass change were collected from a bird banding station, analyzing both community-level and species-specific data for Common Yellowthroat (*Geothlypis trichas*) and Ovenbird (*Seiurus aurocapilla*). Comparisons were made between early habitat improvement stages (2011-2013) and later periods (2017-2024) for both spring and fall migrations. Results showed significant increases in stopover duration and mass gain for all species during the pre-breeding season from early to later years of the reforestation project. Conversely, the post-breeding season saw numerical increases in stopover duration and mass gain that were not statistically significant. These findings highlight the potential of quality urban forest habitats to support migratory birds, especially during the pre-breeding migration season. Additionally, they raise important questions about urbanization's effects on migratory birds' phenology during the pre-breeding migration season and what their physiological needs are during the post-breeding migration season.

### **6 Avian vocal mimicry affects automated bioacoustic classification: A case study with a**

**North American mimic** Carmen S. Reisdorf, Andrew C. Kasner, Justin P. Wied, Jacquelyn K. Grace, X. Ben Wu

Automated bioacoustic species classifiers are increasingly used in avian population monitoring, but they can produce false positive misclassifications. One overlooked mechanism of false positives in automated species detection is the misclassification of mimetic birdsong. In this study, we quantify the impact of the mimetic song of *Mimus polyglottos* (Northern Mockingbird) on the performance of BirdNET, a popular automated avian species classifier. After manual analysis of 22483 BirdNET detections from 42 hours of soundscape audio, we found 506 BirdNET false positives caused by *M. polyglottos* song. We find that even after common filtering

methods, 18 of these 506 misclassifications persist in BirdNET results. The quantity of these misclassifications can be indicated by detections of the mimicking species. Overall, impacts varied with the focal species and the purpose of the bioacoustic survey. Mockingbird-associated false positives did not materially affect species richness patterns, but had variable species-specific effects. Further study of mimicking songbirds and continued development of BirdNET output filtering mechanisms can minimize the impact of mimetic vocalization false positives produced by this globally important avian passive acoustic monitoring tool.

## **7 Spatial Distribution of Sympatric Owl Species in South Texas** Claire Molina, Andrea Montalvo, Lindsay Martinez, Jane Kunberger, Ashley M. Long

Species distribution models (SDMs), which predict species' occurrence based on environmental variables, are widely used to guide rare species surveys and inform conservation planning. However, traditional SDMs often assume species respond independently to environmental conditions, overlooking biotic interactions and shared habitat preferences. For co-occurring species that compete for resources or exhibit niche partitioning, these interactions can significantly shape realized distributions, highlighting the need to incorporate them into SDMs. Our objectives are to (one) quantify spatial overlap among three sympatric owl species in South Texas—Great Horned Owl (*Bubo virginianus*, GHOW), Eastern Screech Owl (*Megascops asio*, EASO), and the federally threatened Cactus Ferruginous Pygmy-Owl (*Glaucidium brasilianum cactorum*, CFPO)—and (two) compare predictive performance of models that account for co-occurrence and potential biotic interactions against traditional single-species SDMs. In January 2026, we conducted preliminary surveys at four working ranches to characterize owl habitat associations and inform future sampling. We detected 137 owls and calculated woody-cover composition within 500 m of each detection. CFPO and EASO probability of occupancy increased, while GHOW probability slightly decreased, as percent woody cover increased. In March, May and October 2026 and 2027, we will conduct playback surveys for all three species, along with acoustic monitoring paired with field-based and remotely sensed vegetation data, to develop joint SDMs. These models will provide insights into community-level habitat requirements and inform conservation strategies for co-occurring owls in working landscapes where management decisions affect multiple species simultaneously.

## **8 Effects of fire on the occupancy and habitat associations of the Northern Ground Hornbill (*Bucorvus abyssinicus*) in a heterogenous tropical Sudan savannah landscape**

Lois I. David, Nguvan M. Agaigbe, Samuel T. Ivande, Fidelis A. Atuo

Fire is a crucial biological activity in Sudan savannah ecosystems; yet its impact on the distribution and habitat utilization of large, wide-ranging species like the Northern Ground Hornbill (*Bucorvus abyssinicus*) is inadequately comprehended. Here, we investigated the impacts of fire regimes including recently burned, long unburned, and frequently burned on the occupancy probability and habitat connections of this species within a diverse tropical Sudan savannah landscape. Employing a repeated transect survey design in 2021, 2024, and 2025, we utilized a multi-season occupancy modeling framework to estimate occupancy ( $\psi$ ) and detection probability ( $p$ ), while considering imperfect detection. Site-level factors comprised fire

condition, availability of nesting trees (stems > 40 cm DBH), ground vegetation openness, and indications of anthropogenic disturbance. We anticipated that occupancy would peak in moderately burned regions that preserve structural habitat elements, especially large trees essential for nesting and roosting, whereas detection probability would increase in recently burned areas where diminished ground cover improves visibility and vocal detectability. Preliminary findings suggest that fire condition is a key determinant of occupancy, with frequently burnt regions like the Ahmadu Bello corridor exhibiting a persistent presence of hornbills throughout the survey years. Detection probability fluctuated according to the time of day and survey year, with morning surveys producing significantly elevated detection rates. These findings underscore the dual function of fire in concurrently influencing foraging habitat and structural complexity, with consequences for adaptive fire management strategies intended to preserve Northern Ground Hornbill populations in increasingly anthropogenically stressed savannah environments.

### **9 Comparing Estimated Avian Species Richness Between Point Counts and Autonomous Recording Units** Alexander N Hoxie, Jane M Kunberger, Andrea Montalvo, Michael L. Morrison, Ashley M Long

Long-term monitoring is essential for assessing avian population trends, responses to habitat management, and species composition. Point counts (PCs) to document species occurrence, though autonomous recording units (ARUs) could serve as a passive alternative for collecting standardized bird data. However, relatively few studies have directly evaluated the strengths and limitations of both methods. Our objective was to compare estimates of avian species richness between PCs and ARUs at the point and plot scales. We conducted 10-minute PCs at 19 points across 8 plots in June 2018–2023 at East Foundation’s San Antonio Viejo Ranch in south Texas. In June 2025, we deployed ARUs for 2 weeks at each point and conducted a single 10-minute PC at the same points. We processed acoustic data using BirdNET and manually validated all species identifications. At both spatial scales, ARU-derived species richness was approximately double that of PCs. At the point level, ARUs detected 46 species not recorded during the paired 2025 PCs, whereas PCs detected 12 species missed by ARUs; 24 species were detected by both methods. Our results suggest that ARUs can detect more species than PCs, particularly those that are less abundant or more difficult for observers to identify in real time. Conversely, PCs detected some species that vocalize infrequently or that BirdNET identifies less reliably, highlighting the complementary strengths of both methods for long-term monitoring of bird assemblages.

### **10 Climate-driven, species-specific trends of globally threatened migratory ducks in the East Asian-Australasian Flyway** Faysal Ahmad, Chen Chen, Zhao Qilin, Moh Moh Maung Zin, K. M Aarif, Jinglan Liu, Hamed A. El-Serehy

The population trends of globally threatened wintering ducks in the East Asian-Australasian Flyway (EAAF) are being influenced by climate change, but the species-specific response to climate variables are poorly studied. We investigated the effects of climate variables on the targeted ducks, combined 6 years population count data (2019-2024) with 44 years of climate

data (1981-2024), including temperature, dew or frost point, specific humidity, relative humidity and precipitation. Common Pochard showed a significant positive temporal trend ( $P=0.0266$ ), with abundance increasing from ~3 individuals in 2019 to nearly 20 in 2023, while Baer's ( $P=0.154$ ), Ferruginous ( $P=0.140$ ), and Falcated Duck ( $P=0.420$ ) trends were non-significant. Cross-correlation analyses revealed that Falcated Duck was most moisture sensitive, with strong positive correlations to precipitation ( $r=0.66$ , lag-4), specific humidity ( $r=0.63$ , lag-4), and dew or frost point ( $r=0.54$ , lag -4), while Common Pochard correlated with precipitation ( $r=0.56$ , lag-4) and dew or frost ( $r=0.41$ , lag-5). Mann-Kendall tests showed significant warming in March ( $P=0.00048$ ) and September ( $P=0.01946$ ), with increasing atmospheric moisture in April (dew or frost  $0.0854$  °C/year) and July (specific humidity  $0.0412$  g/kg/year). The results indicate that there is indeed clear evidence of the influences of early-season warming and moistening, and the effects are already being experienced by migratory duck populations not just in the immediate response but also in a 2-4 month lagged response. This stresses the necessity of species-specific moisture-reactive conservation measures, climate-based wetland management and conservation in the urban wetlands in the EAAFP countries.

**11 The composition of avian assemblages in riparian ecosystems of the Southeastern United States: the role of habitat structure, botany, and hydrologic conditions** Kathryn Schabron, Alban Guillaumet, Barrie Lee Sullivan, Alvin Diamond, Brian Helms

Wetlands that serve as permanent and temporary habitats for many species face many threats. Troy and Auburn University have been tasked by the Alabama Department of Environmental Management and the EPA to establish baseline reference conditions for blackwater wetland. Blackwater generally has low pH, dissolved oxygen, conductivity, and nutrient content with a tea-stained color. We aim to establish baseline reference conditions for blackwater wetland avifauna and habitat characteristics that influence avian assemblage. Data on habitat structure, botanical composition, water chemistry, and avian community richness will be collected. Site selection will result in 50 stream sites, half with wetlands and half without. Primary literature was used to inform a habitat structure characterization protocol. Conductivity, pH, and color will be used to place the stream along the chemical gradient of blackwater. Botanical composition will be assessed along a transect perpendicular to the stream. A Wildlife Acoustics Song Meter Mini 2 will record an hour before sunrise, four hours after sunrise, and an hour before and after sunset for seven days. Avian vocal data will be assessed using the computer learning software Chirpity. An occupancy model will be used to assess site-level habitat traits influencing avian species' presence/absence. A Principal Components Analysis (PCA) will render a visual representation of the unique gradients of environmental variation that influence avian community composition. The results of this study will provide insight into avian habitat selection and assist in the creation of a standard blackwater wetland monitoring protocol implemented by ADEM across the state of Alabama.

**12 Breeding Bird Responses to Active Forest Management in the Pine Barrens of Southeastern Massachusetts** Evan Dalton

Decades of fire-suppression in the pine barrens of Massachusetts have led to dense forests with dangerously-high fuel levels and consequent risk of large wildfires. Recently, there has been increasing momentum for the use of active forest management practices, such as controlled burns and mechanical thinning to reduce public safety risks while restoring functionality to an increasingly-rare ecosystem and its associated biota. Since the early 1970's, Manomet Conservation Sciences has periodically monitored the breeding bird communities in the pine barrens of southeastern Massachusetts. During the 2024 and 2025 breeding seasons, we conducted point counts, passive mist-netting and vegetation surveys to better understand the responses of breeding bird communities to recent active management practices in the Myles Standish Complex in Plymouth, Massachusetts. Our monitoring detected varying effects of vegetation structure and years-since-management on the breeding densities of our focal species: Eastern Towhee, Prairie Warbler, Common Yellowthroat and Pine Warbler. Our results suggest that a "shifting mosaic" pattern of active management best supports the diverse habitat preferences of Pine Barrens bird communities.

### **13 Bird Seed Variations in Attracting Birds Alder Dayer-Meyers**

Bird feeding is popular in the United States of America to attract birds to watch. People who feed birds try to get more birds. My research question was: does the variety of bird seed make the species and numbers of birds that come to the feeder vary? My count site was the bird feeder in my backyard in southwestern Virginia. For three days I filled it with black oil sunflower seed. Then I fed the birds a mixture of seed, mealworms, and bark butter bites (suet). I counted for 30 minutes each morning. I only counted the highest number of birds observed at the same time. Then I calculated the average number of species and the average maximum number of individuals. I saw an average of 5.33 species (range of four to seven species) for the black oil sunflower seed and an average of 7.33 species (range of five to nine species) for the mixed seed. I observed an average max number of individual birds of 10.00 for the black oil sunflower seed and an average max number of individual birds of 12.67 for the mixed seed. I found that the variety of bird seed makes the species and numbers of birds that come to the feeder vary. I learned that the mixed seed attracts more birds. In the future, I am interested in trying this study with more bird seeds.

### **14 A meta-analysis on the use of Propranolol on non-domesticated birds Elle Kauppi**

Propranolol, a beta-blocker which blocks beta-one receptors in the heart, has been suggested as a way to mitigate stress of birds during captivity for research. This meta-analysis will examine the use of propranolol on non-domesticated birds during captivity. The data will be examined using an aggregate data approach. One focus of this meta-analysis will be dosage, as there is a wide range of dosages used in the research, and there are no official dosage guidelines. Dosages will be compared by species and age. Additionally analysis between dosage and side-effects and mortality will be examined. The response of the birds will also be compared by dose, using metrics such as HRV (heart rate variability) and blood pressure, and compared by species and age. The reported side-effects, adverse effects, and mortality will be also examined

for any correlation. The discussion will include an examination of the usage parameters as well as the benefits and potential determinants of use of propranolol both in general as well as specifically for reducing stress during captivity for birds being used in research.

### **15 Analyzing Trends in Bird Fecal Contamination in Coastal New Hampshire Waterways**

Reka Ivanyi, Steve Jones, Margaret Eid, Alex Rakowski, Robin Batchelor, Elisabeth Petit, Randi Foxall, Cheryl Whistler

Bird fecal contamination comes up as a frequent issue among people farming shellfish and recreating in the rivers and bays of coastal New Hampshire. It is important to understand if this contamination is increasing and if it should be of concern to people who are using New Hampshire waterways. In our study we tracked the frequency and location of bird fecal contamination along the Lamprey River watershed in New Hampshire over the course of five years to begin to form a long-term dataset of avian contamination in local waterways. We collected water samples from a consistent set of sites in the watershed to track bacterial indicators of fecal contamination and extracted bacterial DNA from samples showing contamination. We then used source-specific PCR to track when and where bird contamination occurred. This information can help locals know when it is safe to swim in surrounding rivers, and inform strategies to locate and reduce pollution sources. In addition to the avian data, understanding if other sources of contamination besides birds is of greater concern is also helpful information to local policymakers and conservationists. We sought to answer these questions in our study.

### **16 Why so defensive? Nest defense behavior in Great Black-backed Gulls (*Larus marinus*)**

Kayla M Cannon, F Dylan Titmuss, Mary E Everett, Sarah J Courchesne, Kristen M Covino

The Great Black-backed Gull (*Larus marinus*) is a ground-nesting, socially-monogamous seabird likely to experience steep population declines in the next 50 years. As part of a long-term banding study, we investigated Great Black-backed Gull nest defense behavior to discern how the species responds to threats from humans, which will inform how researchers can minimize potential stressors. 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. Nesting context affected gulls' defense responses such that gulls nesting on campus had lower response scores and shorter latencies than gulls nesting in dense subcolony. Temporal components also affected defense responses. Response scores decreased as hatch date approached, and response scores and latencies both decreased with later calendar dates. Sex had an additive effect in some models such that female response scores were higher while male latency times were shorter. Our findings suggest that gulls may expend more energy on nest defense in densely-populated areas, early

in incubation, and defensive response may differ by sex. These behavioral responses to the nesting environment have important conservation implications for this seabird genus.

**17 Egg Turning and Incubation Trade-offs during Asynchronous Hatch in Wild Scarlet Macaws (*Ara macao*)** Adam C. Bower, Constance J. Woodman, Gabriela Vigo-Trauco, Donald J. Brightsmith

Incubation is a fundamental component of avian reproduction that involves behavioral regulation of egg temperature and turning. Egg turning remains poorly understood, although turn angle and rate are thought to be higher in altricial taxa and vary over the incubation period, particularly under uniparental incubation. Incubation culminates with hatch, which may occur asynchronously within a clutch. Although the fitness consequences of hatching asynchrony are well studied, the temporary trade-offs created between post-hatch care and continued incubation of unhatched eggs remains poorly studied. We used data loggers in artificial eggs to study uniparental incubation in wild Scarlet Macaw (*Ara macao*) clutches in Tambopata National Reserve of southeastern Peru (n=37 clutches). We hypothesized that (1) Scarlet Macaw egg turn parameters are higher than in more precocial taxa and variable over the incubation period, and that (2) egg temperature, turn angle, and turn rate decrease during asynchronous hatch. Egg turn angles and rates averaged 42.2° turn-1 and 11.5 turns h-1, respectively, well above values reported for more precocial taxa, and varied significantly among hens and over the incubation period. Preliminary analyses also suggest that egg temperature and turn angle, but not turn rate, decrease during asynchronous hatch. Diminished incubation conditions during asynchronous hatch could increase hatch failure and within-clutch age and age-specific mass differences, all components of brood reduction in Scarlet Macaws. This study tests broader taxonomic and ecological patterns of incubation behavior, investigates underappreciated links between hatching asynchrony and brood reduction, and informs relevant conservation practices.

**18 Surviving the Storm: Impacts of the Gulf Coast Blizzard on Overwintering Wilson's Snipe** Kevin Perozeni, Ashley M. Long

Extreme weather events can profoundly affect migratory and resident wildlife by influencing survival, movements, and habitat use. For migratory shorebirds, short-term fluctuations in temperature and precipitation can inhibit fuel loading, impact stopover quality or locations, prolong migratory timing, or cause mortality. Wilson's snipe (*Gallinago delicata*; hereafter snipe) is a large migratory shorebird and game species that winters along the Gulf Coast. In early January 2025, we deployed GPS transmitters on four snipe in central Texas and 10 in Louisiana to study their movement ecology. However, when the first recorded blizzard on the U.S. Gulf Coast occurred between 20–22 January 2025, these tagged individuals provided a unique opportunity to examine the immediate effects of extreme winter weather on snipe. We observed one storm-related mortality among Texas-tagged birds. In contrast, five Louisiana-tagged birds died during the event: three within 6–8 hours of the blizzard's onset and two more over the following two nights as temperatures remained between -16°C and -6°C. We tracked movements and behaviors of surviving snipe before, during, and after the storm and documented increased activity in response to snowfall and declining temperatures. Our results

provide rare insights into how extreme winter weather affects shorebirds along the Gulf Coast. Further, our findings could help predict how snipe may respond to future environmental changes, informing management for this unique species.

### **19 Optimizing Acoustic Monitoring: Detection Distance Insights for Bird Surveys in South Texas** Kasey M. Pirkle, Alexander N. Hoxie, Andrea B. Montalvo, Ashley M. Long

Autonomous recording units (ARUs) are widely used for avian monitoring. However, detection ranges of ARUs vary with environmental factors that affect sound propagation. Accounting for these factors is essential to avoid inadequate sampling design and misinterpretation of results. We evaluated how vegetation, weather, and data processing methods affect ARU detection distances for multiple bird species at two East Foundation ranches in South Texas. We sampled nine 400-m transects representing open, shrubby, and dense vegetation at each ranch, and replicated each transect twice. At each transect, we placed eight ARUs at 50-m intervals and played recordings of ~30 bird species with standardized amplitudes through a speaker at the 0-m point. We processed recordings in BirdNET at three confidence thresholds (0.5, 0.7, 0.9) and listened to recordings to create species-specific detection histories for each transect. Detection probability decreased with increasing distance across all vegetation classes, methods, and species. Manual review of recordings resulted in four times more detections than BirdNET at the lowest confidence threshold. Detection distances differed across species; observers had a 95% probability of detecting northern bobwhite (*Colinus virginianus*) from recordings at 200 m in open vegetation, but a 56% probability of detecting clay-colored sparrow (*Spizella pallida*). Detection probabilities decreased as wind speed increased for all species, methods, and vegetation classes. Our results provide species-specific detection thresholds that could help optimize ARU placement, sampling effort, and data processing in south Texas, and reiterate the importance of accounting for environmental and methodological factors when designing acoustic surveys for birds.

### **20 Mountain Plover Wintering Status and Behavioral Analysis on Sod Farms in West-central Texas** Maika Sloan, Tania Homayoun, Ben R. Skipper, Andrew C. Kasner

Mountain Plover (*Anarhynchus montanus*; MOPL) populations are declining due to loss of short-grass prairie habitat. However, MOPL use of croplands, including sod farms, holds promise in providing habitat for wintering birds. Our objectives were to quantify sod farm use by MOPL wintering in Texas. We recorded MOPL abundance during multiple visits to 3 farms in West-central Texas from Jan—Mar 2026 and by analysis of eBird records. To test the hypothesis that behavior (foraging, roosting) varied relative to within-field microhabitat (grass, bare ground), we conducted flock scan samples and individual samples of behavior and microhabitat use. Our highest count was 217 MOPL (range:0-217; 15 surveys) at FM380 Farm, 83 MOPL (range:42-83; 4 surveys) at 9-hole Farm, and zero (7 surveys) at S&S Farm. FM380 Farm and S&S Farm eBird records indicated MOPL were less abundant at S&S Farm in both winters (2024-25 high count=103, range:4-103; 2025-26 high count=53, range:2-53) than at FM380 (2024-25 high count=149, range:5-149; 2025-26 high count=241, range:3-241). Numerous other winter eBird records across the state indicate frequent sod farm occupancy.

Individuals (n=10) spent most of their time vigilant (51.82%±21.81SD), followed by walking (22.04%±9.15), foraging (19.23%±13.22), and roosting (6.00%±18.97). In scan samples (n=16, flock size-range:38-202), foraging occurred more often on grass (17.80%±28.67) than bare ground (0.29%±1.15), and roosting occurred more often on bare ground (35.83%±42.88) than grass (6.64%±20.63). Mountain Plovers used sod farms regularly as winter habitat in our region and elsewhere across the state, and they utilize within-field microhabitats differentially during daily activity.

## **21 Roost Tree Characteristics of Egyptian Vulture (*Neophron percnopterus*) in the Chitwan-Annapurna Landscape (CHAL) of Nepal** Ashish Pariyar, Vernon Byrd, Dinesh Bhusal, Krishna Prasad Bhusal, Suman Bhattarai

Conservation of the endangered Egyptian vulture (*Neophron percnopterus*) in Nepal would benefit from more information on its specific habitat needs. This study investigated the characteristics of roost trees, including the number of Egyptian Vultures present, from December 2024 to March 2025, at thirteen sites across the Chitwan Annapurna Landscape, where the species was known to occur. Altogether, n = 152 trees of thirteen different species were identified as the roost trees, based on the presence of the birds or their droppings and feathers underneath. *Bombax ceiba* was the most common species used. Roost trees were relatively large (mean diameter at breast height: 57.8 ± 17.22 cm, height: 17.9 ± 3.93 m, and crown width: 10.90 ± 3.05 m), compared to nearby unused control trees (34.81 ± 7.31 cm, 11.71 ± 3.10 m, 5.73 ± 1.64 m). Most roost trees were located on the northeast (49%) and northwest (21%) aspects, with an average slope of 14.4°, across all study sites. Distance to food sources and water bodies were significant predictors of the number of Egyptian vultures using the roost trees. When summed across sites, the peak count of Egyptian vultures was 566, with site-level peaks ranging from fewer than seven to 378 individuals at Dovilla. Crown width, height of tree, distance to water bodies, and slope were significant predictors of the number of vultures at roost sites. These findings provide baseline information for planning conservation efforts to save the roost trees and minimize threats to them.

## **22 Day-Night Movement and Home Range of Breeding American Oystercatchers on the Texas Coast** Aeris Clarkson, Rebecca Bracken, Chris Butler

American Oystercatchers (*Haematopus palliatus*) are a species of conservation concern in Texas, with approximately 500 individuals occurring statewide. Despite their conservation status and territorial breeding behavior, fine-scale movement patterns of the Texas breeding population remain poorly documented, and nocturnal movement during the breeding season has not been systematically quantified. The objective of this ongoing study is to describe and compare daytime and nighttime movement rates and estimate breeding-season home ranges of individuals along the Texas Gulf Coast. Solar-powered global positioning system cellular transmitters were deployed on five breeding birds (n=5) in early February. Locations were

recorded hourly during daylight (06:00–19:59) and every two hours at night (20:00–05:59) to preserve battery life. Across all individuals, 798 step intervals were available for analysis. Movement rate was standardized by time between fixes (km/hr) to account for unequal sampling intervals. Mean movement rate during daylight was 0.363 km/hr (standard deviation = 0.783; n=604), whereas nighttime movement averaged 0.268 km/hr (standard deviation = 0.830; n=194). Substantial variation among individuals was observed in both periods. Breeding-season home ranges were estimated for each bird using an autocorrelated kernel density estimator to account for temporal autocorrelation in telemetry data. These preliminary results illustrate individual variability in day and night movement patterns during the breeding season. As additional individuals are incorporated (anticipated n ≈ 20), continued analyses will refine movement and home-range estimates and contribute to conservation planning for this limited Texas population.

### **23 Observer differences in bird detection: How relevant are they for monitoring?** Igor Berkunsky

Observer skill in identifying and quantifying birds can vary substantially with experience, potentially affecting the reliability of monitoring programs. We evaluated how observer experience influences the detection and counts of bird species in a heterogeneous grassland landscape. In November 2021, we conducted roadside point counts at 35 stations across a mosaic of serrano grassland and agricultural fields in the Tandilia Mountains, Argentina. Three observers surveyed each point simultaneously: two experienced observers and one novice observer. Each recorded the number of individuals detected for every species. Across all surveys, we detected 49 species. The experienced observers detected more species (47 and 44) than the novice observer (39) and recorded more individuals (1,011 and 713) than the novice observer (683). Species missed by the novice observer included *Anthus hellmayri*, *Pseudocolopteryx flaviventris*, and *Bubulcus ibis*. These results indicate that observer experience can meaningfully influence both species richness and abundance estimates, even under synchronised sampling. Our findings highlight the need to explicitly consider observer experience when designing, implementing, and interpreting avian surveys. Accounting for observer effects may be particularly important in environmental impact monitoring, where detectability biases can alter conclusions, such as assessments associated with wind energy developments in grassland systems.

### **24 Black-capped Vireo nest habitat and thermal microclimate in shrub canopies in the Edwards Plateau** Andrew C. Kasner, Sarah A. Macha, James G. Giocomo, Tania Homayoun, Ben R. Skipper

Environmental factors such as habitat and temperature affect community composition and nest success of shrubland birds. We measured shrub canopy temperatures at 60 randomly selected avian point-count locations at Kickapoo Caverns State Park (KCSP) and South Llano River State Park (SLRSP) during post-delisting population monitoring for Black-capped Vireo (*Vireo atricapilla*) from May–July 2025 in the southwest Edwards Plateau, Texas. We placed data loggers (recording temperature every 15 min) and autonomous recording units (ARUs, recording bird vocalizations) at point-count locations (KCSP n=40; SLRSP n=20), distributed

about equally in broad-leafed shrubs and Ashe juniper (*Juniperus ashei*). We detected 80 bird species at KCSP, with Black-capped Vireo at 19 points, and 90 species at SLRSP with Black-capped Vireo at 14 points. Mean daily maximum temperature was higher in junipers than in broad-leafed shrubs at KCSP (juniper:  $38.43^{\circ}\text{C}\pm 0.30\text{SE}$ ; broad-leafed:  $37.65^{\circ}\text{C}\pm 0.31$ ;  $U=36348.50$ ,  $P<0.001$ ) and SLRSP (juniper:  $37.94^{\circ}\text{C}\pm 0.41$ ; broad-leafed:  $36.96^{\circ}\text{C}\pm 0.46$ ;  $U=8039.50$ ,  $P=0.031$ ). Paired data loggers were deployed at nest sites ( $n=11$  nests) in broad-leafed shrubs with nests and the nearest juniper (within 10m). In nest territories, daily maximum temperature was higher in juniper ( $36.50^{\circ}\text{C}\pm 0.49$ ) than in broad-leafed shrubs ( $35.51^{\circ}\text{C}\pm 0.604$ ;  $W=1,056$ ,  $z=-3.381$ ,  $P<0.001$ ). During drought years, with presumably higher temperatures, Black-capped vireos use junipers for nesting disproportionately more than expected with low nest success. Our results suggest the difference between juniper and broad-leafed shrub canopy temperatures may be biologically significant regarding potential nest success of shrubland birds in juniper dominated regions, highlighting the importance of prescribed fire and other tools for mitigating juniper invasion in semi-arid savannas.

**25 Breeding success of cavity-nesting birds in relation to native vegetation in a residential suburb** Medhavi Ambardar, Joanna E. Demas, Mabel Kirst

Urbanization transforms natural habitats and can have profound impacts on birds. Residential yards and parks can support bird habitat in urban and suburban landscapes, but a major concern is that they are often dominated by non-native, invasive, or exotic vegetation which can negatively impact reproductive success. The Lake Michigan Bird Observatory created the Neighborhood Habitat Improvement Program (NHIP) to increase native planting and other bird-friendly actions at the residential level, and to understand the relationships between reproductive success in cavity-nesting birds and native vegetation in urban and suburban areas. We expected that nest boxes surrounded by higher proportions of native vegetation would be occupied by pairs that initiate earlier clutches, have larger clutches, and fledge more offspring. From 2023-2025, Observatory staff and community science volunteers collected cavity-nesting bird reproduction data from over 100 nest boxes in public parks and residential yards in and around Port Washington, WI. We have also begun collecting data on vegetation characteristics within a 15 m radius circle around each nest box ( $n=42$  boxes so far). We will present relationships between native vegetation and bird reproductive success, and will explore other factors that might influence reproductive success. In future years, we will color band adult birds to track reproductive success and pair dynamics within and across years in relation to habitat quality. Findings from this study will increase our understanding of the effects of urbanization on birds, and will help us develop evidence-based, actionable steps that community members can take to help native birds.

**26 Monitoring avian migration at Paul Smith's College in the northern Adirondacks using nocturnal flight calls** Hannah Pryor, William R. Evans, Jorie Favreau, Harold Mills, Kelly B. Klingler

Avian migration is a seasonal movement that enables species to track resource availability between breeding and wintering grounds. Climate change threatens to disrupt time-tested

migration pathways and environmental cues that birds rely upon to successfully navigate the timing and direction of travel. Since most migration occurs during the night, passive acoustic monitoring provides a non-invasive method of tracking species through the detection and identification of their unique night flight calls. This project utilizes a nocturnal acoustic monitoring station at Paul Smith's College in the northern Adirondack Park of New York to examine fall migratory activity. We aim to 1) provide an inventory of avian species utilizing this particular migratory pathway and determine when peak migration occurs, 2) evaluate if weather variables are significantly influencing migratory activity, and 3) examine patterns of migratory activity for a species at risk, the Canada warbler (*Cardellina canadensis*). Multiple regression analyses reveal that average peak migration (~5000 calls) for all species occurred in mid-September although this varied slightly with the 2024 peak occurring two weeks earlier than 2025. Humidity, temperature, and wind speed metrics each had a significant effect on call detection, with increased calls occurring during lower temperatures, higher humidity, and lower wind speed, respectively. Compared to peak migration detected across all species, Canada warbler is an earlier-season migrant with greatest presence detected around mid-August at a total of 75 calls. Future work includes adding to the inventory through more species identification and exploring the specific influence of weather variables on Canada warbler migration.

## **27 Comparative observations of summit metabolism in Carolina Wrens (*Thryothorus ludovicianus*) at the northern edge of their periphery and other wintering bird species**

Morgan Gear, Joel Ralston

Climate-driven range shifts are increasingly common among temperate bird species, yet physiological constraints may limit expansion into colder, more variable environments. This study examined whether summit metabolism (MSUM), a major indicator of cold tolerance, plays a role in determining viability at the poleward-most areas of a species' distribution, using the Carolina Wren (*Thryothorus ludovicianus*) as a focal species within a broader interspecific comparison. Carolina Wrens were captured near the northern periphery of their range in northern Indiana, and MSUM was measured using a sliding-scale cold-exposure protocol. We compiled published MSUM and body mass data for 11 additional wintering bird species, and used linear regression to analyze the effects of migratory strategy and range position on MSUM. Range position was defined as the proportion of winter observations occurring north of MSUM sampling locations using 2020-2025 eBird records. Carolina Wrens exhibited the highest mass-corrected MSUM among the 12 species analyzed. Raw MSUM was significantly higher in species that were tested closer to the northern edge of their winter distributions, suggesting elevated thermogenic capacity near northern peripheries. In contrast, mass-corrected MSUM was not significantly related to range position or migratory strategy. These findings indicate that while body size and geography both influence metabolic performance, proximity to the cold edge of winter ranges is associated with increased overall metabolic output. Despite ongoing climatic warming, persistent physiological constraints may continue to shape avian winter distributions. Integrating physiological, behavioral, and climatic data will improve predictions of species' range dynamics under increasingly variable environments.

**28 Trends in Carolina Wren (*Thryothorus ludovicianus*) abundance in response to warming temperatures at the northern and southern peripheries of its range** Natalie Anderson, Joel Ralston

There has been a poleward shift in the distribution and abundance of bird species in North America in response to warming temperature. Changes in local bird abundance supports that shifting climates influence patterns of colonization and range dynamics. However, fewer studies have investigated whether temperatures are exceeding species thermal tolerances in the South. Studies investigating patterns of abundance at leading and trailing edges will help us distinguish between distributional shifts, and climate mediated range expansions. This study aimed to examine the effect of rising temperature on abundance of Carolina Wren at both the southern and northern periphery of their range. Trends in abundance were estimated from The North American Breeding Bird Survey (BBS) data. We used linear regression to determine whether temperature at each BBS site influenced annual trends in abundance. Results showed that Carolina Wren abundance significantly increased over time in both the north and south peripheries, and across the entire range. Temperature had a significant positive effect on abundance in the northern periphery suggesting the sites are becoming more suitable, allowing for an increased abundance of Carolina Wren. Temperature did not have a significant effect on abundance in the southern periphery suggesting that it has not yet exceeded thermal limits for Carolina Wren. In total, our results suggest that rising temperatures are facilitating a range expansion for Carolina Wrens in the north, rather than a range-wide distributional shift. Understanding the difference between range expansion and shifting will allow us to better predict ongoing species responses to climate change.

**29 The Human-Wildlife Conflict: Understanding Andean Condor Poisoning Events in Ecuador** Margaret Hemp, Jessie Williamson

Understanding human-wildlife conflict is essential for designing management strategies that promote coexistence in shared landscapes. In Ecuador, the Andean Condor (*Vultur gryphus*) is Critically Endangered, with <130 individuals. Between 2007 and 2021, poisonings and shootings accounted for a 25% reduction in the national population. We sought to identify factors influencing human perception of condors, and potential sources of conflict. From 2024 to 2025, we conducted 105 interviews in the Cotopaxi and Napo provinces of Ecuador. Subjects' ages ranged from 28 to 78 years (mean = 52), with 65 male participants and 40 female participants. 54.3% of subjects identified as mestizo, 27.6% indigenous. Data were analyzed using a series of generalized linear models, controlling for village identity.[JW1.1] Preliminary analyses suggest that people with fewer cattle, less education, and with property furthest from Cotopaxi National Park showed strongest neutrality in their overall perception of condors. People with properties at lower elevations had more positive overall perceptions. Older subjects (mean = 58 years) were more likely to believe condors to be the biggest threat to their livestock, over predators including pumas, bears, dogs, and foxes. Finally, subjects with higher education levels believed that condors are both predators and scavengers, whereas subjects with lower education levels believed that condors are either predators or scavengers. By identifying predictors shaping perceptions of the Andean Condor in Ecuador, this study provides an empirical basis for

targeted conflict-mitigation strategies to support condor conservation and human-wildlife co-existence in Ecuador.

**30 Reference genome and demographic history of the Moroccan double-spurred spurfowl (*Pternistis bicalcaratus ayesha*)** Harshita Rana, Giovanni Forcina, Abdellah Ichen, Balaji Chattopadhyay, Kritika M. Garg

Galliform birds represent one of the most threatened avian groups globally, yet genomic resources are limited for many species. The double-spurred spurfowl (*Pternistis bicalcaratus*) is widely distributed in West Africa, but its northern subspecies, *Pternistis bicalcaratus ayesha*, is restricted to northwestern Morocco and is classified as critically endangered. Here, we generated the first high-quality reference genome for *P. b. ayesha* and used it to investigate its historical population dynamics. Illumina short-read data and PacBio continuous long-read and high-fidelity sequencing data were generated from an adult male. Seven genome assembly strategies, employing both hybrid and long-read approaches, were evaluated to identify the most contiguous assembly. The final genome assembly was 1.01 gigabases in size with 599 scaffolds and an N50 of 16.36 megabases, recovering 99 percent of conserved avian single-copy genes. Gene family evolution analyses indicated expansion in families related to cytoskeletal organization, motor activity, muscle function, and keratinization, consistent with adaptations observed in ground-dwelling game birds. Historical effective population size was reconstructed using the Pairwise Sequentially Markovian Coalescent model. Demographic reconstruction revealed that effective population size peaked approximately 190 thousand years ago during the Penultimate Glacial Period, followed by a continued decline to the present. This genome provides the first genomic resource for *P. b. ayesha* and will enable future studies of population genomics, evolutionary divergence across the Sahara Desert, and conservation management of this geographically isolated subspecies.

**31 Genomic signatures of isolation and reduced diversity in an island-endemic hummingbird, the Puerto Rican Mango (*Anthracothorax aurulentus*)** Alix E. Matthews, Sebastian Gallego, Valentina Alaasam, Marcella Baiz

Endemic species often exhibit reduced genetic diversity due to restricted geographic ranges and demographic bottlenecks associated with environmental disturbances. Island systems can further amplify these effects due to geographic isolation. The Puerto Rican Mango Hummingbird (*Anthracothorax aurulentus*), a newly designated Caribbean endemic species was historically distributed across Puerto Rico, Vieques, and the northern Virgin Islands but now it is primarily restricted to Puerto Rico. This hummingbird occupies primarily lowland and coastal habitats which can potentially expose populations to frequent tropical storms and hurricanes. These disturbances may lead to repeated population contractions and shape the genetic diversity through time. To investigate the genetic diversity of this Puerto Rican endemic, we analyzed mitochondrial and whole-genome sequences from historical museum and contemporary samples. We compared levels of heterozygosity and genomic variation in *A. aurulentus* with its sister species *A. dominicus*, distributed on Hispaniola, and a related Puerto Rican species, *A. viridis*. Our analyses show that *A. aurulentus* exhibits significantly lower heterozygosity than

both species, which may suggest reduced effective population size or stronger demographic fluctuations. Demographic modeling analyses will be used to determine whether the reduced genetic variation in *A. aurulentus* reflects the effects of an initial colonization event or repeated bottlenecks associated with natural disturbances.

### **32 Cormorant Diversity in the Aleutian Islands** Iqra Dubed, Isaiah A. Faso-Formoso, Elle Kauppi, Maggie Gibson, David Kim, Douglas Causey, Jess McLaughlin

The Aleutian Islands support a diverse community of cormorants, including *Urile urile* (Red-faced Cormorant), *Urile pelagicus* (Pelagic Cormorant), and *Nannopterum auritum* (Double-crested Cormorant), along with a potentially distinct and understudied form referred to as "Kenyon's Shag" (*Urile kenyoni*, KESH). First identified from skeletal remains by Dr. Doug Causey, KESH displays a suite of unique traits including smaller adult body size, distinct skeletal features, and facial coloration patterns not fully aligning with either PECO or RFCO. Despite these differences, it remains unclear whether KESH represents a valid species, a morphological variant, or a hybrid form. This project combines field sampling across multiple Aleutian and Bering Sea localities with genetic analysis to address three primary questions: (1) Can KESH individuals be distinguished using molecular markers? (2) How genetically divergent are KESH individuals from other cormorants in the region? (3) What is the phylogenetic relationship among Aleutian *Urile* species? Broader evolutionary hypotheses suggest KESH may represent a relic lineage persisting after Pleistocene range shifts, a stable hybrid between RFCO and PECO, or an emergent taxon under selection for distinct ecological traits. Regardless of its taxonomic outcome, the study of KESH highlights important evolutionary dynamics within seabird populations and contributes to our understanding of avian diversity and speciation in remote high-latitude ecosystems.

### **33 Interspecies Social Interaction as a Determining Factor on Hummingbird Migration Timing** Coralie Rossbach

Less than 65% of all migratory birds survive migration, and one of the most difficult parts of their journey is deciding exactly when to begin this migration. This is based on multiple factors, including social cues, which could potentially originate from other bird species. I wondered whether the migration of any species of hummingbird was influenced by that of another. I downloaded data on Rufous, Calliope, and Broad-tailed Hummingbirds from eBird, and then wrote a python program that, for each year from 2010 to 2024 and species, filters outliers using a z-score method. My program then calculates the velocity of the species by finding their average location on each day of the year, which shows how far they have gone in one day, and therefore how fast they are traveling. I then identified when each species arrives from spring migration and departs on fall migration by determining when their velocity is greater or less than a specific threshold. The dates each species arrived at their breeding location were significantly correlated with that of both other species, but their departure dates were not. For example, in years when one species arrived early, the others would also arrive early. However, this can't be explained by the species simply having similar migration dates: In fact, these species migrate months apart, yet they are still correlated. If one species of bird isn't able to adapt to climate

change's altered schedule, it could impact the timing of another group of birds, so other species could also be at risk.

### **34 Comparison of Observer-based Detection Methods and BirdNET Outputs Across Seasons and Land Cover Types** Ravynn A. Garcia, Jane M. Kunberger, Ashley M. Long

Autonomous recording units (ARUs) are increasingly used in avian research because they support standardized, long-term data collection across many sites at once and generate permanent recordings that can be reviewed to reduce observer bias. The large acoustic datasets produced by ARUs, however, require efficient processing tools, prompting widespread use of automated classifiers such as BirdNET. Despite its popularity, the factors that influence BirdNET's detection accuracy remain unclear. We compared avian species richness, detection concurrence, and species accumulation across three identification methods: observer detections during transect surveys, observer detections from audio recordings, and BirdNET detections at three confidence thresholds (0.5, 0.75, 0.9). We also examined how these metrics varied by season and vegetation type. We collected data in 2023 at a study site in Louisiana with three land cover types: active crop field, retired pasture, and forested wetland. We established one 200-m transect and one acoustic monitoring point in each land cover type, then conducted monthly transect surveys and programmed ARUs to record for two hrs after sunrise during quarterly sampling periods. We summarized transect survey data, manually annotated recordings, and analyzed recordings using BirdNET. Preliminary results indicated that BirdNET's 0.75 threshold produced richness estimates most similar to manual annotations, although species composition differed among methods. Species accumulation curves were broadly similar, but BirdNET at 0.5 produced a curve that did not plateau during first-quarter sampling. Ongoing analyses will clarify how season and vegetation type influence detection patterns across methods and help guide future use of automated acoustic tools like BirdNET.

### **35 Comparing Methods to Estimate the Seasonal Migration Distance of Land Birds** Andrea Benavides Castaño, Matthew D Hack, Max L Witynski, Benjamin M Winger

Over recent decades, migratory birds have experienced significant population declines. Understanding where they occur in space and time is important for addressing those declines. The migration distance of a population is one key aspect of its distribution that can influence the timing, speed, and duration of migration, as well as other aspects of life history. Geolocators attached to individual birds and geographic range maps summarizing the seasonal distributions of species provide two sources of information to estimate migration distance. However, it is not clear how closely aligned the estimates are between these two different methods. We compared the migration distance derived from geolocators and distributional range maps of 58 species and 956 individuals of North American land birds to evaluate their correspondence. We also quantified the effect of sample size and several biogeographic variables on the relationship between the two measurements. Results revealed a strong, positive relationship between estimates of migration distance derived from geolocators and from distributional projections. However, range maps tend to underestimate the migration distances of the longest-distance

migrants and overestimate the distances of the shortest migrants. Our findings provide context for interpreting measurements of migration distance often used in the scientific literature.