CONFERENCE ABSTRACTS

AFO 2025

OGDEN, UTAH • 29 JULY - 1 AUG

Abstracts are listed in alphabetical order by last name of the first author (presenter names are in bold). Abstracts are organized into two sections: (1) oral presentations, and (2) poster presentations. The code in front of the title indicates the session in which the presentation was given. E.g., 730A1 (Tuesday 7/30, Room A, 1st session). Posters are listed by their poster number before the title.

731A2   Birds as bioindicators: Recommendations for ecotoxicological studies

Keith R. Andringa & Jacquelyn K. Grace

Texas A&M University

Birds are frequently cited as effective bioindicators for environmental change due to their global distribution, ecological diversity, and visibility. However, their use in ecotoxicology is not always straightforward—birds differ widely in their sensitivity to contaminants, behavior, and habitat use, all of which influence their value as indicators of pollutant exposure. As a result, broad application of birds as bioindicators can lead to inconsistent or misleading conclusions if species are not selected and studied carefully. We offer practical recommendations for designing ecotoxicological studies that use birds as bioindicators. First, we emphasize the importance of power analyses tailored to the planned statistical and modeling approaches, ensuring studies are appropriately scaled and robust. Second, we recommend prioritizing research to define species sensitivity profiles for pollutants of interest, as toxicological responses can vary significantly across bird taxa and contaminant types. Third, researchers should consider species' natural history traits—such as diet, foraging behavior, and habitat preference—that may increase or limit exposure to specific contaminants. Lastly, we highlight the need to account for avian motility when interpreting spatial contaminant patterns; highly mobile species may integrate exposure over large areas, simultaneously complicating the attribution of sources and providing unique opportunities to assess contaminant dynamics in field systems. These guidelines are intended to improve the reliability and interpretability of bird-based ecotoxicological studies and to support more consistent applications of bioindication across systems. By aligning study design with ecological and toxicological principles, we can strengthen the role of birds as meaningful indicators of environmental health and establish frameworks to standardize future ecotoxicological studies.

731B2   Life history and thermoregulation in Tree Swallows: ontogeny and early life experience

Daniel Ardia

Franklin & Marshall College

Understanding the development of thermoregulation in nestling birds can give insight into potential responses to rapid environmental change, as well as the impact of early life conditions on ontogeny. Here, tree swallows are used as a case study for the interplay between life history and thermoregulation. First, I investigated the ontogeny of thermoregulation in tree swallows (*Tachycineta bicolor*) by examining cooling rate and change in body temperature in nestlings aged between 2 days and 12 days. Nestling cooling rate and ability to maintain body temperature was assessed via a cooling challenge of 20 degrees C. Overall, tree swallow nestlings showed limited thermoregulatory ability early in development as predicted equilibrium temperatures were close to the cooling challenge temperature of 20 degrees C at days 2-4, but showed a steady increase as nestlings became older and larger. However, contrary to predictions, there was no clear age at which the ability to maintain body temperature appeared. Second, I manipulated early life conditions to investigate how early exposure to cold changes developmental trajectories. After early exposure to cold, younger nestlings show reduced performance in maintaining body temperature, while older nestlings show increased performance. Results will be put in a larger life history and comparative context showing thermoregulation as an integrative trait that reveals both ecological conditions and evolutionary history.

801A2   Ecological musicality: Toward an adaptive explanation of vocal-gestural coupling in parrots

Karl Berg, Soraya A. Delgado, Nurialby Viloria Canelon, Abigail Pozulp & Wim Pouw

University of Texas Rio Grande Valley—School of Integrative Biological and Chemical Sciences

The ability to imitate human speech and dance are rare traits in birds, yet both are taken to extremes in psittacids, suggesting a broader system of social learning. However, there are few field data describing how vocal and gestural communication are used in wild parrots. We studied vocal gestures in a marked population of Green-rumped Parrotlets (*Forpus passerinus*) in Venezuela. Adult parrotlets produced vocalizations across nineteen, broad functional contexts. Ten types were shared between sexes, monosyllabic, produced mainly in maintenance and survival contexts and spectrographic structure varied markedly depending on mobility. One exception was the begging call, only given by females, used in parental care and integrated with a gestural display. Eight additional vocal types involved complex syntax, were mostly unique to males, used in reproductive contexts, and were integrated with a variety of gestural displays. Because females are the limiting sex, we speculate that female choice has shaped vocal-gestural signaling in males whereas the reverse is more likely in the case of female begging calls. Thus, multiple forms of intersexual selection appear to have shaped vocal gesturing of a parrot and reveal from early in development a common theme of vocal-embodiment.

730B1	**Multivariate analysis of breeding outcomes in California Least Terns and Western Snowy Plovers through years of low rocket launch activity**

Rachel Budge[1], Megan R. McCullah-Boozer[1], Levi T. Moats[2], Lucas K. Hall[1], Kent L. Gee[2], Grant W. Hart[2], Dan Robinette[3], Emily Rice[3], & Emily Olivares Garnica[1]

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Anthropogenic noise has been shown to affect seabird and shorebird reproductive success. Research has shown that anthropogenic noise in seabird and shorebird nesting areas has been increasing over time. Rocket launches are an extreme form of anthropogenic noise, but there is a gap in our understanding of rocket launch noise and its effects on seabirds and shorebirds. Vandenberg Space Force Base (VSFB) is a launch site for space vehicles located on California's Central Coast and is also home to breeding colonies of threatened Western Snowy Plovers and federally endangered California Least Terns. Rockets have been launched from VSFB since 1959 when launch cadence was high. Since 2000, however, launch cadence has been historically low, but cadence has been increasing in recent years. We had two objectives: 1. to assess whether periods of low rocket launch cadence influenced multiple breeding outcomes in plover and tern populations at VSFB, while accounting for other abiotic factors; and 2. to evaluate whether reproductive success at VSFB during these periods differed from that of the reference plover and tern populations along California's Pacific Coast, where rocket launches do not occur. To do this, we analyzed plover and tern nest monitoring data for the last 23 years at VSFB and reference sites.

801B2	**Balancing recreation and conservation: Snowy Plover nesting and disturbance at Great Salt Lake**

Chelsea Cameron, Emily Hamel, Max Malmquist, & Heidi Hoven

National Audubon Society

The Snowy Plover (*Anarhynchus nivosus*), designated as a Species of Greatest Conservation Need (SGCN) in Utah, is a ground-nesting shorebird that relies on coastal beaches and inland saline lakes for breeding. The expansive mudflats and wetlands along Great Salt Lake (GSL) serve as a critical breeding site for a significant percentage of the inland population. Human activity along the south shore raises concerns about potential disturbances that may impact nesting success. We implemented a nest monitoring program to assess the recreational disturbance impacts on nesting success while expanding baseline knowledge of nesting ecology and behavior at GSL. In 2023, ecologists and volunteers conducted nest surveys, recording nest locations and habitat characteristics. In 2024, the project expanded to incorporate motion-activated cameras to capture behavioral data and identify factors influencing nest fate, such as predation and human disturbance. This year, recreation surveys will assess human presence and disturbance at our study areas. Supported by state agencies and volunteers, the project is a tool for data collection and a community science effort. While preliminary analysis is ongoing, we anticipate a correlation between elevated disturbance levels and more frequent interruptions to active nest incubation. Additionally, this pilot study has proven trail cameras are effective for establishing a long-term monitoring program at GSL. Continued analysis will further explore the relationship between human disturbance and nesting success to inform adaptive management strategies. These efforts support conservation actions that balance recreational use with habitat protection, mitigate disturbance, and ensure the long-term survival of Snowy Plovers at GSL.

801B2	**Tracking change at receding Terminal Lake: Population dynamics and distribution of Snowy Plover at Great Salt Lake**

John Cavitt, Niku Mojabi, Connor Johnson, John Neil & John Luft

Weber State University—Avian Ecology Lab, Dept of Zoology

The Snowy Plover (*Anarhynchus nivosus*) is a small, ground-nesting shorebird of conservation concern in Utah. The Great Salt Lake (GSL) provides essential habitat for one of the largest breeding populations of this species throughout its range. In summer 2025, a comprehensive breeding survey was conducted to assess the current status of the breeding population and compare findings to a prior survey completed in 2008. The 2008 survey represented the first standardized, lake-wide estimate of Snowy Plover abundance and distribution at GSL, establishing a critical baseline for long-term population monitoring and habitat assessment. The 2025 survey replicates the 2008 methodology, including site coverage, survey timing, and area count protocols, allowing for robust comparisons across years. Surveys targeted both historically occupied and potentially suitable but previously unsurveyed areas. In addition to generating updated estimates of adult breeding abundance, the 2025 effort documented habitat conditions and spatial shifts in site occupancy potentially associated with long-term declines in lake elevation, and land use pressures. This effort informs the conservation status of Snowy Plovers at GSL and provides actionable data for land managers and policy-makers tasked with protecting critical shorebird habitats. Results will support future monitoring strategies and contribute to regional efforts under the broader Western Snowy Plover conservation framework.

801B2 Assessing shorebird reproductive output at Great Salt Lake: Linking nest success to population sustainability through scenario-based modeling

John Cavitt & Sydney Sjoblom

Weber State University—Avian Ecology Lab, Dept of Zoology

Understanding the demographic drivers of shorebird populations is essential for effective conservation, particularly in dynamic saline lake systems such as Great Salt Lake (GSL), Utah. We present an overview of a long-term nesting dataset spanning roughly two decades for two priority breeding species: American Avocet (*Recurvirostra americana*) and Black-necked Stilt (Himantopus mexicanus). Data were collected from distinct wetlands spanning the most important breeding sites and encompassed a range of habitat types and hydrological regimes. The goals of this project were to quantify spatial and temporal variation in nest survival, assess species-specific patterns in breeding productivity, and evaluate whether observed reproductive rates are sufficient to support population sustainability under current environmental conditions. We also examine potential influences of habitat type, timing of nest initiation, and interannual weather variation on nest outcomes. Preliminary modeling efforts include logistic exposure approaches for estimating daily survival rates and scenario-based population models using published demographic parameters. This analysis represents one of the most extensive breeding shorebird datasets from a terminal lake ecosystem. It offers critical insight into reproductive ecology at GSL and provides a foundation for future efforts to assess climate vulnerability, inform water management decisions, and prioritize conservation action for declining saline lake shorebird populations.

730A1 Pathogen prevalence on suburban and rural bird feeders

Anna Chess & Stefan Woltmann

Austin Peay State University

Feeding wild birds is a common practice among homeowners, allowing them to connect with nature and provide a reliable source of food for visiting birds. However, bird feeders can act as fomites for avian pathogens. Bird feeders congregate species that may not frequently interact in the wild, facilitating transmission via direct contact with other birds or indirectly through exposure to saliva and feces. Thus, areas with more bird feeders (suburban) may have a higher prevalence of avian pathogens than feeders in more rural settings. We placed sterilized metal bird feeders in suburban and rural locations in central Tennessee for a minimum of two weeks. We attached a plastic tray to the bottom of the feeder to facilitate fecal sample collection. We observed each feeder once a week for thirty minutes to estimate community composition and visitation rates. Swabs of feeders, trays, and fecal samples were taken weekly and assayed for the presence of *Salmonella enterica* and *Campylobacter jejuni* via qPCR. Each site was sampled during the fall (September through November) and winter (January through March). We expected a higher prevalence of pathogens in suburban areas than rural areas. In addition, we expected a higher prevalence of pathogens during the winter season due to higher visitation rates.

730B2 Examining direct and indirect effects of differential spring migration on energetic condition in parulid warblers

Mark Deutschlander, Madison Sutton, & Michelle Gianvecchio

Hobart and William Smith Colleges

Experience and selective pressures can lead to differential spring migration of adults and juveniles and males and females. Common to differential migration are age- and sex-dependent arrival time differences. However, arrival time can be a factor that impacts migratory biology (e.g. duration of stopovers, energetic condition). Analyses of spring migratory behaviors and biology should seek to parse out direct effects of age and sex from indirect effects of age and sex based on differences in timing of migration. Using data from the Braddock Bay Bird Observatory and path analysis models to determine both the direct and indirect effects (through arrival time differences) on energetic condition, we analyzed how sex and age influence energetic condition during spring stopover for 11 species of warblers. Energetic condition was estimated using a standardized mass index. Mass gain was also examined to estimate refueling rates. Differential migration in stopover timing occurred between sexes and ages for all species. Arrival date was the best predictor of energetic condition of 8 species, and sex was the best predictor in 3 species. In most, species, the direct, or inherent, impact of age and sex, was greater than indirect effects of age or sex mediated through arrival date. 10 species gained mass during stopover. Despite these significant effects our models accounted for only 10-30% of the variation in condition, depending on species. However, our models were surprisingly consistent across all 11 species.

801A2   **Beyond the piñon pines: Where do Pinyon Jays place their nesting colonies?**

Rory Eggleston, Lesley Howard, Jay Carlisle, Dave Dahlgren, & Eric Thacker

Utah State University

The Pinyon Jay (*Gymnorhinus cyanocephalus*), a highly social, seed-caching corvid closely associated with piñon-juniper woodlands, is in decline throughout much of its range. A dearth of data regarding this decline, coupled with limited data at the northern extent of their range, necessitates research to inform land managers and an upcoming review for Endangered Species Act listing. Piñon-juniper removal, a management tool valuable in restoring sagebrush and habitat for sagebrush-obligate species, fire mitigation, and promoting forage, may inadvertently impact Pinyon Jay populations, as key aspects of their life history are not understood. To evaluate breeding colony site occurrence in northwestern Utah and southern Idaho, we employed a maximum entropy modeling approach utilizing colony location data (n=18) collected from 2022 to 2024 alongside environmental covariates. Our results suggest that jays selected for colony sites with moderate (17-25%) tree and bare ground cover, low shrub cover (0-20%), intermediate mean temperature during the coldest month (a proxy for thermal stability within the landscape; 1.4℃), and moderate elevation (1600-1900m). Colony sites exhibited negative associations with higher annual and wet-season (January-March) precipitation. Our predictive map indicated higher probability of colony occurrence along the piñon-juniper woodland-shrubland ecotone characteristic of the bases of Great Basin mountain ranges. This ecotone, frequently associated with woodland encroachment and removal treatments in this region, may represent a critical habitat for breeding Pinyon Jays. Our findings provide a first step towards providing essential information for land managers to balance conservation needs of Pinyon Jays, sagebrush-obligates, and livestock within this dynamic landscape.

730B2   **Habitat associations of Nearctic-Neotropical migratory landbirds along an elevational gradient in central Honduras**

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SELVA: Investigación para la Conservación en el Neotrópico

The migration of Nearctic-Neotropical migratory landbirds is a critical period when most annual mortality occurs. Despite this, key aspects of habitat associations, community composition, and stopover site use, remain understudied. To determine the relative abundance and common patterns of habitat use of Nearctic-Neotropical migratory landbirds, we conducted standardized censuses across an elevational gradient (920–2,160 m) at La Tigra National Park, Honduras, during pre-breeding and post-breeding migration in 2022. The community of 71 migratory bird species exhibited a linear pattern of decreasing richness and abundance with increasing elevation. However, single-species occupancy models revealed non-linear distribution patterns. Habitats at lower elevations, such as premontane dry forests, mixed forests, and mixed forest with shade-grown coffee, held more species than higher-elevation habitats, such as pine-oak and cloud forests. However, the latter supported unique communities, with some species occurring almost exclusively in these habitats. Differences in species richness across vegetation types were slight and less pronounced during post-breeding migration compared to pre-breeding migration but may suggest resource-driven habitat tracking across migration periods. Our findings highlight the importance of forests at different elevations in La Tigra National Park—and, by extension, central-southern Honduras—as well as its potential as stopover site for a community of 20 transient landbirds, including species of conservation concern (e.g., Olive-sided Flycatcher, Cerulean Warbler, and Canada Warbler). Further research is needed to better understand the migratory ecology of Nearctic-Neotropical migratory landbirds across a broader geographic range and over a longer time scale.

801B2   **Insights on Wilson's Phalarope and Snowy Plover Movements through the Motus Wildlife Tracking System**

Tully Frain, Angie Trumbo, & Reily Shields

Tracy Aviary

The Wilson's Phalarope (*Phalaropus tricolor*) and Snowy Plover (*Anarhynchus nivosus*) are both ground-nesting shorebirds that rely on the Great Salt Lake for nesting habitat. We aimed to learn about migratory pathways for these species, including stopover locations and other movement patterns. In 2024, we began deploying lightweight Motus transmitters onto adult nesting birds, capturing birds on the nest using bownets. Between May and August, we applied a total of 22 tags on Wilson's Phalaropes (n=10) and Snowy Plovers (n=12). We then monitored their movements during the breeding and migration periods. While Snowy Plovers exhibited strong localization, remaining within their nesting territories throughout their breeding season, Wilson's Phalaropes demonstrated extensive intra-lake movements, traveling to multiple feeding sites separated by distances sometimes exceeding 50 km. The data revealed an eastern Texas migration route used by Wilson's Phalaropes, adding to our understanding of potential pathways between the Great Salt Lake and wintering grounds in South America. Motus tracking data revealed that nearly all tagged Snowy Plovers followed a direct migration route from Great Salt Lake to the Colorado River Delta, where they staged before dispersing to other sites in western Mexico. Initial tracking results provide valuable baseline data on migration routes and habitat use patterns that will guide future research and inform regional conservation planning for these shorebird species. These findings relied on the Motus network our team developed in the Salt Lake Valley, which promises to provide additional data for a variety of shorebird species that rely on the lake.

801B1   **Assessing vulnerability of Eastern North American landbird species to climate and land use change**

Matthew Gilbert, & Courtney L. Davis

Cornell University

Biodiversity is declining at an alarming rate due to a myriad of factors, especially changes in climate and land use that are only expected to intensify in the coming decades. However, few studies have assessed species' potential exposure or vulnerability to projected climate and land use change over large spatial extents. Here, we used publicly available eBird-derived data products on the relative abundances of 218 landbird species across the eastern U.S. to quantify species- and community-level exposure to projected climate and land use changes through the end of the century. We furthermore identified the ecological characteristics associated with the most vulnerable species, groups, and locations across the region. We found that the species and areas which are especially vulnerable to these threats were broadly consistent under different shared socioeconomic and representative concentration (SSP-RCP) pathways but that overall vulnerability was highest under the most pessimistic emissions scenario. Boreal species and species typically associated with forest and grassland habitats have the highest projected exposure to climate change, whereas species associated with marshes and urban environments will face higher exposure to changes in land use. Notably, individual species will tend to experience high exposure to either climate or land use change, but rarely both. Despite differences in the species potentially affected by these threats, spatial patterns of community-wide vulnerability to climate and land use change were strongly correlated, underscoring the need to target conservation intervention towards key areas across the eastern U.S. where avian communities may be the most vulnerable.

731A2   **Sublethal effects of early-life exposure to common and emerging contaminants in birds**

Jacquelyn Grace, Elena Duran, Mary Ann Ottinger, & Terri J. Maness

Texas A&M University—Department of Ecology and Conservation Biology

Early life stages are critical windows for physiological, behavioral, and neurological organization, with long-term effects on survival and reproductive success. Contaminants are one of the mechanisms through which such organization can occur, impacting individual fitness, and consequently population stability and resilience. However, research on early-life contaminant effects in wild birds remains limited, compared to laboratory model species. In this synthesis, we examine both short- and long-term effects of early-life exposure to widespread contaminants in birds. We focus on the Gulf of Mexico as a habitat under anthropogenic stress from exposure to a complex mixture of chemicals and changing land uses. We review common and emerging contaminants of concern, discuss differences in sensitivity by route of exposure, life stage, and life history, and identify key research gaps. We find that additional research is needed on altricial species, post-hatching early-life exposure, long-term effects, and exposure to ecologically relevant contaminant concentrations and pathways. As anthropogenic stressors on wildlife intensify, understanding both lethal and sublethal impacts of contaminants on the health of individuals and populations is essential for guiding conservation efforts, including restoration, management, and mitigation.

730B1   Project overview of the influence of rocket launches on sensitive birds at Vandenberg Space Force Base

Lucas Hall[1], Megan R. McCullah-Boozer[1], Rachel H. Budge[1], Kent L. Gee[2], Grant W. Hart[2], Levi T. Moats[2], John P. LaBonte[3], Lawrence F. Wolski[3], Dan Robinette[4], Emily Rice[4]

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Understanding how species of concern respond to anthropogenic activities is becoming increasingly important. While the ways in which anthropogenic activities affect species are potentially many, our understanding of the effects of anthropogenic noise on species is still developing, particularly with infrequent, high amplitude anthropogenic noise. Vandenberg Space Force Base (VSFB), situated along the Central Coast of California, presents an opportunity to study the effects of high amplitude anthropogenic noise on avian species of concern as 1) the rate of rocket launches/landings has recently increased and is predicted to significantly increase in the coming years compared to the last three decades and 2) there are threatened and endangered avian species (i.e., California Least Tern, Western Snowy Plover) at VSFB that may be affected by the increased launch cadence. Our interdisciplinary research team consisting of wildlife ecologists and physical acousticians is working to understand 1) the acoustical landscape at VSFB before and after rocket launches and 2) the short and long-term responses of threatened and endangered avian species inhabiting areas near active launch complexes at VSFB. Using data previously and currently collected on focal avian species from VSFB, we will create models that describe potential impacts and help predict species responses to rocket launches. We will discuss the scope and overview of this project.

731B1   Wildfire shapes songbird communities in the northern sagebrush biome

Will Harrod, David Dahlgren, Eric Thacker, & Larissa Yocom

Utah State University

The past century has seen fire regimes in numerous ecosystems altered by anthropogenic disruptions. In the Sagebrush (*Artemisia* ssp.) Biome of western North America, the invasion of annual grasses has led to more frequent stand-replacing wildfires and the loss of sagebrush cover. Historically, mosaic disturbances were likely important in maintaining the habitat required sagebrush-obligate and steppe-associated avian species, which have experienced persistent declines over the past sixty years. Limited information exists on how contemporary fire regimes within sagebrush systems affect songbirds. To address research gaps, we assessed (1) how fire affects breeding densities of three sagebrush-obligate and three steppe-associated songbirds across elevational, time since fire, and burn severity gradients, (2) which vegetation characteristics were associated with the abundance of these songbirds, and (3) the relationships between vegetation cover and fire. We conducted multi-species songbird point counts and analyzed the results using a hierarchical Bayesian distance sampling model. As predicted, sagebrush-obligate species were more abundant in unburned reference areas and other areas with relatively higher shrub cover, while steppe-associated species had similar or increased abundance in burned areas. Avian communities in older burns and areas with lower average burn severity more closely resembled those in reference areas. Our results highlight the negative effects of altered fire regimes on sagebrush-obligate songbirds and the importance of mixed-severity fires in promoting habitat for steppe-associated songbirds. Additionally, we documented post-fire recovery potential for sagebrush-obligates, especially at higher elevations or in areas where burn severity was lower.

801A2   **Adaptive patterns of anti-predator escape behavior in a globally introduced bird species**

Mark E. Hauber, Roi Dor, & Tomas Grim

City University of New York—Graduate Center, Advanced Science Research Center

Introduced species can represent quasi-experimental, anthropogenic case studies of both ecological and evolutionary principles. When these species are firmly established, competitive interactions between native and introduced species interactions, including foraging, spacing, and breeding competition, may become costs of such species invasions. In turn, genetic and/or plasticity-driven changes in behavior and morphology could also take place in the invading species with increasing introduction lag (time since the onset of introduction). Critically, however, introduction lag is difficult to study in any single non-native population without long-term observations, and, instead, it requires geographically repeated measures of the focal response variables across invasive populations that were introduced at different times. Here we tested a priori predictors of predator-avoidance behaviors through the flight initiation distance (FID) assay of a widely distributed invasive bird species, the Common Myna *Acridotheres tristis*. The species was extensively and consistently sampled throughout most of its independently introduced ranges across all hemispheres. Critically, FID increased with greater introduction lag. We also detected additional functional patterns in that FID increased towards the rural range within a continuous metric of urban-rural gradient and also at shorter distances from the Equator. Any robust study of FID must also include proximate predictors as well and, accordingly, we found that FID increased with greater starting distance, with lower immediate human density, with flighted over walking escape responses, and at lower heights of a bird's perch above ground but was unrelated to myna group size. Respectively, these factors are informative about the sensory cues triggering anti-predator behaviors in invasive mynas and imply an adaptive set of patterns of anti-predator responses in the introduced ranges of this species.

731A2   **Riparian songbirds and aquatic-terrestrial linkages in Acadia National Park**

Allyson Jackson & Christina A. Murphy

Purchase College, SUNY

Seemingly disparate ecosystems can be linked through food webs. The connection between aquatic and terrestrial ecosystems flows both ways – with terrestrial subsidies providing prey and nutrients to freshwater aquatic systems and emergent aquatic prey providing a subsidy to the surrounding avian community. Aquatic nutrients moving into terrestrial ecosystems may be accompanied by aquatic contaminants. Methylmercury (Hg) moves along energy pathways – meaning that aquatic subsidies can move Hg into the surrounding terrestrial ecosystem. In Acadia National Park, we wanted to understand how riparian songbirds reflect the larger aquatic-terrestrial linkages of major lake systems. In 2022, we collected food web samples from five lakes in Acadia National Park (Maine, USA): Aunt Betty Pond, Eagle Lake, Great Long Pond, Jordan Pond, and Lake Wood. We used stable isotopes of carbon and nitrogen in baseline prey (aquatic and terrestrial invertebrates) and in songbird blood to trace reliance on aquatic carbon in terrestrial riparian songbirds. We also assessed Hg in invertebrates and songbirds to determine if birds that rely more on aquatic carbon have correspondingly higher exposure to mercury.

730B2   **Distribution, abundance, and habitat use of Golden Eagles in Maine**

Evan Jackson, Erynn Call, & Tricia Miller

Maine Department of Inland Fisheries & Wildlife

Golden Eagles (*Aquila chrysaetos*) are of significant conservation concern in eastern North America, particularly in Maine, where they are listed as endangered. This study aims to assess the distribution, abundance, and habitat use of Golden Eagles in Maine, a region crucial for the species due to its historical nesting sites and proximity to the breeding population in Quebec. The last documented breeding attempt occurred in 1997, and the last successful attempt in 1984. Recent telemetry data indicated some eagles frequented areas near historic nesting sites during summer, but the extent of their use remains unclear. To better understand this, we began working with community scientists in January 2024 to deploy baited camera traps to locate areas of use by Golden Eagles throughout the year. Initial findings of the camera trapping effort suggest potential habitat use near former nesting sites, highlighting the importance of these areas for conservation efforts. To gain more detailed information on habitat use, we captured two Golden Eagles in early 2025 and attached CTT GPS-GSM transmitters to monitor year-round movements. By integrating public outreach and scientific research, we aim to enhance conservation strategies for the eastern Golden Eagle population, supporting research priorities identified by the Eastern Golden Eagle Working Group and aligning with the Maine Wildlife Action Plan.

801A2   **Extreme extra-limital nesting in two different bird species: natural history and speculation as to cause**

L. Scott Johnson

Towson University

Extra-limital nesting has been reported in many bird species but is usually very rare and often associated with range expansion. In a few species, however, extra-limital nesting is repeatedly observed and some cases are "extreme" in that nesting occurs strikingly far from established populations. I describe several intriguing cases of extreme extra-limital nesting in a songbird, the Mountain Bluebird, and a raptor, the Common Black Hawk. I propose that these two species share a common feature of their biology, one related to habitat requirements, that has favored a genetic pre-disposition to wander widely if need be in search of a place to nest. The result is that, on occasion, two individuals of the opposite sex will encounter one another well outside the species' normal breeding range but in suitable habitat nonetheless, and thus proceed with nesting.

730A2   **Recent uses of the Monitoring Avian Productivity and Survivorship (MAPS) banding data**

Danielle Kaschube

The Institute for Bird Populations

The Institute for Bird Populations' (IBP's) Monitoring Avian Productivity and Survivorship (MAPS) program is the longest-running large-scale banding program in North America. It has been in operation since 1989, marking its 36th year of operation in 2025. Collecting data at this spatial and temporal scale means that datasets like this are not commonly available for analysis. The MAPS data is publicly available, allowing researchers with the analytical resources and questions to be answered, but lacking the required resources for widespread data collection. The MAPS Data Exploration Tool went online in 2023, and many scientists and other professionals have utilized the data since then. Some examples of the data use include: studies of phenology; helping to developing localized bird monitoring; comparing survival between males and females in more than 30 bird species; examining the effects of pollution on the reproduction and survival of aerial insectivores; planning Motus tower deployments; aiding in development of State Wildlife Action Plans for bird species of greatest conservation need; explore landscape and climate drivers of molt phenology. In addition to utilizing already collected data, the MAPS program also provides a network of active banders to assist with other data collection needs, such as obtaining feather samples, identifying avian parasites, and capturing photos of feathers and molt.

801A2   **Testing the effect of plumage coloration on reproductive isolation in a rapid seedeater radiation**

Simón Kraemer, Jonas Rafael Rosoni Rodrigues, Melanie Browne, Maria Recuerda, Juan Francisco Cataudela, Adrian Santiago Di Giacomo, Leonardo Campagna, & **Cecilia Kopuchian**

Laboratorio de Biología de la Conservación, Centro de Ecología Aplicada del Litoral, Consejo Nacional de Investigaciones Científicas y Tecnicaas.

The Capuchino seedeaters (*Sporophila*) are a group of 12 species which have speciated rapidly with little genomic differentiation but strong phenotypic divergence and sexual dichromatism. Male song and coloration maintain assortative mating, and the few divergent genomic regions that differentiate species contain melanogenesis genes. While these species hybridize in captivity, producing intermediate plumage patterns, the incidence of interbreeding in the wild and its consequences have not yet been assessed. Here we studied two sympatric populations of *S. hypoxantha*, *S. iberaensis*, and *S. hypochroma* in the Esteros del Iberá in Argentina. During four reproductive seasons (2016-2018, 2023-2025) we tracked nests, measured male coloration phenotypes and collected blood from~571 adults and nestlings for genetic analyses. We built a coloration index from the varying plumage patches across the three taxa that can differentiate species in a PCA and identify intermediately pigmented individuals. We then used our genetic samples to assess paternity with ddRAD markers and developed an amplicon sequencing protocol to genotype individuals at the coloration loci that distinguish our focal species (ASIP, TYRP1, OCA2/HERC2, and SCL45A2). We found that the proportion of genetically admixed individuals at these loci varies from ~5 to 38% and is higher between the species pair showing more subtle coloration differences. We show the relationship between a male's coloration phenotype, its genotype, and the reproductive success over the course of various reproductive seasons. Our results suggest that the strength of coloration as a prezygotic barrier maintaining reproductive isolation varies depending on the species pair.

731B2   **Magellanic Plover distribution: Combining trophic availability and spatial analysis of eBird data**

Juan Manuel Krapovickas, Luciana Raquel Musmeci, & **Carlos Ignacio Roesler**

Aves Argentinas

The Magellanic Plover (*Pluvianellus socialis*) is a threatened and little-known shorebird. It breeds in the south-southwest of Patagonia and migrates north along the Atlantic coast during winter. In order to understand its distribution based on ecological niche determinants, we conducted two analyses: 1) a spatial machine-learning model that associates eBird records with satellite images to predict its potential distribution, assuming suitable habitat exists in unrecorded locations; and 2) a comparison, through multivariate and univariate analyses, of trophic availability between lakes of the plateaus of Lake Strobel (northernmost end of the reproductive distribution) and Lake Buenos Aires (outside the distribution area), under the hypothesis that we would find differences between regularly used sites and those with no documented records. The results led us to conclude that at a large scale, there are underlying processes that modulate distribution at another spatial and/or historical scale not analyzed in the spatial model. The potential distribution includes sites outside the distribution area, such as the Chenqueniyen plateaus (Río Negro) and Lake Buenos Aires (Santa Cruz). Furthermore, at a small scale, in the extreme northwest of the distribution, trophic availability plays a predominant role as a distribution modulator, as the lakes used by the plovers have more diverse and abundant macroinvertebrate communities that also have a different composition, with distinctive taxa. These results stand out by themselves considering how rare and remote this plover is but also highlight the importance of combining different scales of analysis to delimitate priority areas for conservation.

731B2   **The role of Prothonotary Warbler (*Protonotaria citrea*) nest composition on nest arthropods and fungi**

Skadi Kylander & Michael Brewer

East Carolina University

Bird nests do not exist in isolation. In addition to the birds, nests support communities of arthropods and fungi, which interact with one another and nest components to form microhabitats. Some of these arthropods may be ectoparasites, like mites and lice, and others may depredate ectoparasites. Still others may help keep the nest clean by consuming wastes. Similarly, the fungal communities that develop can impact activity in the nest. The plants birds use in nest construction can influence both of these communities. According to the nest protection hypothesis, birds include fresh green plant materials because those plants deter harmful ectoparasites. Similar relationships may exist between plants and fungi in nests. With this project, I am using molecular techniques to identify arthropods and fungi in the nests of the Prothonotary Warbler (*Protonotaria citrea*). This watchlist species is the only cavity-nesting warbler in eastern North America, and uses green bryophytes in its nest, which have not been investigated thoroughly with respect to this hypothesis. Targeting environmental DNA from the nest materials, I am characterizing arthropod and fungal communities in Prothonotary Warbler nests collected from five forested wetland habitats in eastern North Carolina during two field seasons. I am also identifying and analyzing bryophytes from nests to contribute to cataloging these understated plants and their interspecific relationships. The results of this work will contribute to conservation for this watchlist bird by identifying its relationships with plants, fungi, and arthropods in North American wetland habitats stressed by anthropogenic activities and global climate change.

731B2   **Mitogenomic: Timing the radiation of passerine birds**

Violet Lange, Beatriz Mello, Miguel Lentino, Ananias A. Escalante, & M. Andreína Pacheco

Temple University

Passeriformes comprise more than 60% of all extant bird species. Despite numerous phylogenetic analyses of this order, topologies and estimated times of divergence are subject to heavy debate. The main objective of this study is to assess the phylogeny and time of origin of passerine birds using the mitochondrial genome (mtDNA). Although there is a focus on nuclear phylogenomics, understanding the mitochondrial genome remains of interest because of its importance in molecular evolution and its application in biodiversity sciences. Here, we report a well-supported mtDNA phylogeny that is congruent with that from nuclear inferences. The obtained divergence time estimates support the hypothesis of post K-Pg diversification, with an estimated divergence time of approximately 56 million years ago (Mya) for crown Passeriformes, which also corresponds with time estimates in studies performed with nuclear data and is consistent with the diversification of major orders of terrestrial organisms. Additionally, our results show 19 passerine families with accelerated rates of evolution. It is hypothesized that due to the contributions of the mitochondria in metabolism and cellular respiration, phenotypic traits associated with elevated energy expenditure may play a crucial role in these patterns of accelerated evolution. This study enhances our understanding of the evolutionary history of Passeriformes and offers new insights into the rates of evolution of this order. Our inferred topologies and divergence times rescued with mtDNA are congruent with what has been found using nuclear genomes, emphasizing the potential of mitochondrial genomes as a reliable option for future phylogenetic analyses.

801A2 **The effect of testosterone on territorial behavior in the White-throated Sparrow (*Zonotrichia albicollis*)**

Jennifer Long, Christopher Lage, & Brent Horton

University of Maine at Augusta

One of the continent's best-studied and most familiar songbirds, the White-throated Sparrow (*Zonotrichia albicollis*), exhibits a well-known plumage polymorphism (white-striped and tan-striped color morphs) in both sexes, which is based on a chromosomal inversion. Plumage differences are paralleled by differences in behavior and endocrine profiles during the breeding season. Among males, White-striped (WS) males sing more and have higher testosterone than Tan-striped (TS) males during the period of peak territorial defense in the spring. Our study attempts to establish a direct causal link between testosterone and aggressive territorial behavior by experimentally elevating testosterone in males of both morphs in the field and measuring their behavioral responses to simulated territorial intrusions using song playback and a live male decoy. White-throated Sparrows (16 WS and 18 TS) were captured in mist nets during May-June in 2016-2018 in Bradley, Maine. Within each color morph, half were given subcutaneous implants filled with powdered hormone (testosterone treatment) and half were implanted with empty implants (controls). Preliminary analysis shows that WS males show an increase in song rate and tend to get closer to the decoy in response to testosterone treatment, while TS males showed no significant behavioral effects of testosterone treatment. The morph-dependent effects of testosterone treatment on territorial aggression support the hypothesis that morph differences in behavior are due, in part, to differences in the sensitivity of the brain to testosterone.

730A2 **Songbird dynamics at Ladd Marsh: Findings from a small MAPS Station (2018-2024)**

Laura Mahrt & Steve Tanner

Eastern Oregon University

The Ladd Marsh Wildlife Area (near La Grande, OR) has hosted a small Monitoring Avian Productivity and Survivorship (MAPS) station since 2018, with the goal of monitoring local bird populations and their migratory patterns. The station operates with 8 nets and conducts banding sessions seven times annually, from late May to early August. To date, 1803 birds have been banded with the majority aged as Hatch Year and After Hatch Year. Of the banded birds, 342 have been recaptured in subsequent days or years. The sex of most captured birds remains unknown, though 420 females and 500 males have been identified. A total of 47 species have been captured, with the highest number of birds banded in a single session reaching 330, and the lowest number 184. Despite a variety of species captured, no significant trends have been observed in the capture rates of the top 10 species. However, banding data suggest that both specific banding dates and weather conditions play a role in the number of migratory songbirds captured. This long-term data provides valuable insights into avian productivity, migration patterns, and the influence of environmental factors on bird banding success at a small station in the Pacific Northwest.

801B2 **Understanding the impact of environmental change on shorebird abundance and distribution across the lntermountain West over the past 35 years: Preliminary findings**

Max Malmquist, Sharon Montecino, TJ Clark Wolf, Blake Barbaree, Emily Clark, & Emily Hamel

National Audubon Society - Saline Lakes Program

Shorebird abundance and distribution have changed significantly due to habitat loss and degradation over the last century, declining more than most bird taxa worldwide. Saline lakes and inland wetlands provide critical sites for species migrating through dry regions. The lntermountain West sustains hundreds of wetlands and millions of shorebirds migrating along the Pacific Flyway. However, wetlands in this region face threats from climate change and human water use, and the effects on shorebirds are poorly understood. In the early 1990s, surveys conducted at 162 lntermountain West wetlands provided valuable insights into shorebird populations. These were the region's first large-scale shorebird surveys until 2022 when the lntermountain West Shorebird Survey was established to conduct new counts and address data gaps. This research integrates historical and recent data to understand environmental drivers of shorebird population trends and contribute to managing their resources in the region. We use generalized linear models to assess the impact of hydrological changes driven by climate and human water use on shorebirds across 162 sites over the past 35 years. We also examine the effects of agriculture and extreme weather changes on about 200 sites over the last five years. Preliminary results highlight the significance of specific wetlands for shorebirds in the region, helping identify species and sites most resilient to environmental change and guiding management of shallow-water wetlands for shorebirds. This information will aid in setting priorities for future studies and suggest management strategies for conserving shorebirds at inland wetlands in the region.

731A2   **Per- and poly-fluoroalkyl substances in dabbing and diving ducks**

Terri Maness, Victoria Alder, Matthew Henderson, & Jacquelyn Grace

Louisiana Tech University

Per- and poly-fluoroalkyl substances (PFAS) are widespread environmental contaminants, particularly in water sources. PFAS, widely used since the 1940s for their hydrophobic and oleophobic properties, resist microbial degradation and pose risks to wildlife, especially waterfowl due to their diet and frequent contact with potentially contaminated water. This study investigates how feeding strategies—dabbling (surface feeders) vs. diving (underwater foragers)—influence PFAS contamination in waterfowl livers and feathers. Chemical concentrations vary between surface and sediment levels, yet few studies have examined how these differences impact PFAS exposure in birds. We analyzed 20 Blue-winged Teals (*Spatula discors*; dabblers) and 22 Canvasbacks (*Aythya valisineria*; divers) wintering in Louisiana, USA, donated by local hunters. Dissections and chemical analyses were conducted to determine PFAS burdens. We tested sex, location, species, and feeding strategy as predictors of exposure to different PFAS compounds, including long- and short-chain variants. Diving ducks had higher concentrations of long-chain PFAS, while dabbling ducks had higher concentrations of short-chain PFAS. This study provides critical insight into contamination patterns and potential health risks of these contaminants in waterfowl.

730B1   **California Least Tern vocalizations before and after rocket launch disturbance**

Megan McCullah-Boozer, Rachel H. Budge, Levi T. Moats, Emily V. Olivares Garnica, Lucas K. Hall, Kent L. Gee, Dan P. Robinette, & Emily Rice

California State University—Bakersfield

Many species rely on acoustic signals for communication, and disruptions to these signals can have negative consequences. California Least Terns (*Sternula antillarum* browni; herafter 'terns'), a federal and state listed endangered migratory seabird, are particularly vulnerable. A nesting colony of terns resides at Vandenberg Space Force Base within 1 km of an active space launch complex. The effects of rocket launch disturbance on the vocalizations of this population of terns are unknown. There are two hypotheses potentially explaining the vocalization response of terns to a loud acoustic event like a rocket launch. The Lombard effect, which predicts changes in vocalization amplitude, and the acoustic adaptation hypothesis, which predicts shifts in frequency range. Our objective was to test these competing hypotheses using the Firefly Aerospace Alpha rocket launch on 3 July 2024 as a source noise disturbance. To measure the vocalization response of terns, we deployed 12 Song Meter SM4TS (Wildlife Acoustics) devices to continuously record ambient sounds in the tern nesting colony from March to August 2024 (before and after terns arrived). Eight devices were spaced 100 meters apart, and the remaining four devices were configured in a square with a spacing of 25 meters. Pre- and post-launch vocalization activity, amplitude, and frequencies were compared, and these results will be presented.

730B1   **Evaluating acoustic fidelity degradation of professionally ruggedized recording equipment after long-term deployment in a costal environment**

Levi Moats, Rachel Budge, Megan McCullah-Boozer, Kent Gee, & Lucas Hall

Brigham Young University

Harsh environmental conditions have the potential to damage important parts of an acoustic recording system. Some companies such as Wildlife Acoustics specialize in building outdoor acoustic recording systems with functionalities and ruggedizations catered to environmental projects. One of their products is the Song Meter 4 (SM4). A team from Brigham Young University and California State University Bakersfield deployed 31 SM4 recorders from 12/2/23 to 9/7/24 in a costal environment located on Vandenberg Space Force Base in southern California. After bringing in the recorders to be serviced all of them were visually in poor condition and we felt the need to check the acoustic fidelity of the microphones to see if the ruggedization of the SM4s was enough to hold up to long term deployment on the coast. To do this a high-fidelity microphone is used as a baseline standard and each microphone on each recorder is systematically compared to this baseline. Measurements are taken in an anechoic chamber to ensure minimal interference from contaminating noise. The difference between the baseline microphone and the microphones that were deployed are compared to the difference between the baseline microphone and four SM4 units that were not deployed. Results will be discussed.

801B1   **Habitat use and survival of a sparrow species overwintering within rural and urban landscapes**

Jacob Morgan & Kelly Williams

Ohio University

The habitat loss, fragmentation, and degradation caused by anthropogenic development has contributed to the decline of 55% of North American bird species since 1970. There is an urgent need to study how birds use the current landscape throughout the full annual cycle. However, knowledge gaps still exist among migratory and overwintering periods. We used manual radiotelemetry to quantify overwinter habitat use and monitor survival of Slate-colored Juncos (*Junco hyemalis*; n = 54) across two rural and three urban/suburban sites in Athens, Ohio during the winter of 2025. We predicted that overwintering Slate-colored Juncos, regardless of the amount of urbanization present, would avoid impervious surfaces and select habitats with more green space (tree/shrub cover and fields/lawns). However, we expected urban/suburban Slate-colored Juncos to use tree and shrub cover more than conspecifics that overwintered at rural sites. We predicted that overwinter survival would be higher among Slate-colored Juncos that overwintered within the rural landscape than urban/suburban landscape. Our work will provide public and private landowners with information needed to enhance available habitat to support bird conservation throughout the full annual cycle.

731B2   **Nesting phenology and ectoparasite presence affect the length of the post-fledging dependence period of Golden Eagles (*Aquila chrysaetos*)**

Kevin Myers, Ashley L. Santiago, Kevin S. Warner, Matthew J. Stuber, Jen Cruz, & Julie A. Heath

Boise State University, Raptor Research Center

The post-fledging dependency period (PFDP) is a period of high mortality for many birds. In this phase of life, young receive parental care while they learn to fly and forage. For Golden Eagles (*Aquila chrysaetos*) the length of the PFDP is highly variable and the underlying factors contributing to variation remain unclear. We studied the PFDP of non-migratory Golden Eagles in southwestern Idaho. We fit young eagles with GPS or GSM transmitters from 2022 to 2025 to measure the duration of the PFDP and tested whether phenology, nestling health, sex, diet, or nest ectoparasite presence affected the PFDP. The PDFP ranged from 60 days after fledging to over 240 days after fledging. Phenology and nest ectoparasite presence affected the length of the PFDP. Birds that hatched earlier had shorter PFDP lengths than birds hatched later in the breeding season and young from nests without ectoparasites had shorter PFDP compared to young from nests with ectoparasites. There was no relationship between sex, diet, or nestling mass on PFDP. Together, results suggest that young in better condition have shorter PFDP lengths than young in poor condition. Eagles hatched later in the year and exposed to parasites may require a longer PFDP to obtain the condition necessary for dispersal and this may have consequences on the parental costs of raising young, but positive affects for juvenile survival.

731B1   **Who's eating what in Colombia's cloud forest?**

Kimberly Navarro-Velez, Bryam Mateus-Aguilar, Andre A. Dhondt, & Stephen J. Morreale

Cornell University

The intricate interplay of dietary niches among sympatric insectivorous birds remains a compelling area of research in tropical ecosystems. This study aims to elucidate dietary niche differentiation among resident insectivorous avian species in tropical cloud forest in south-western Colombia. We hypothesize that dietary overlap may be more pronounced among closely related species, but below 60%, a threshold indicative of exploitation competition. Our 2023 field research employed passive and active mist-netting at two rural locations, using a rotating playback system. Captured birds were measured, and age/molt assessed using the Wolfe-Ryder-Pyle method, providing demographic data. Fecal samples from 15 insectivorous species were DNA-extracted using Zymo's kit and arthropod DNA amplified with the ANML primer set, followed by Illumina MiSeq sequencing for high-resolution prey data. QIIME2 bioinformatics will use Pianka's and Morisita's indices to quantify dietary overlap. Diversity metrics and Levins' Niche Breadth will assess prey richness, evenness, and specialization across the community. We anticipate dietary partitioning, with higher overlap among phylogenetically close species, yet overall overlap below 60%. Niche breadth and diversity metrics will provide insights into dietary specialization and its potential correlation with phylogeny or morphology. These findings may have conservation implications, contributing to understanding resource partitioning in diverse tropical birds and shedding light on mechanisms behind spatial/temporal overlap in this ecosystem.

730B2   **Avian species diversity as a function of distance from rocket launch pads at Vandenberg Space Force Base**

Emily Olivares Garnica[1], Megan R. McCullah-Boozer[1], Rachel H. Budge[1], Hugo J. Zepeda Villanueva[1], Lucas K. Hall[1], Levi T. Moats[2], Alexander Gunther[2], Grant W. Hart[2], & Kent L. Gee[2]

[1]California State University—Bakersfield, [2]Brigham Young University

Many avian species rely on sound for communication. The noise from frequent rocket launches at Vandenberg Space Force Base (VSFB) could be affecting avian diversity in the surrounding area. We hypothesized that avian species diversity would vary depending on distance from active rocket launch pads. To test this hypothesis, 35 fourth generation Song Meters (SM4, Wildlife Acoustics) were deployed at varying distances from an active launch pad across VSFB. The closest SM4 to an active launch pad was 1.8 km, while the furthest away was 24.7 km. The spacing between all but one SM4 deployed was approximately 2.7 km to 3.1 km. The furthest SM4 was 11.1 km away and was chosen as a potential reference site as it was the furthest away from the active launchpad. The SM4s ran continuously, and the sound wave files were stored in one-hour increments. A selection of sound wave files taken between 15 min after local sunrise and 1000 hr were processed using BirdNET to classify species vocalizations. Understanding if there is a correlation between these two phenomena can provide insight into how anthropogenic activities may affect the surrounding ecosystem.

801B1   **Exploring microplastics as an environmental justice issue through The Urban Bird Project**

Mariel Ortega, Amelia King-Kostelac, & Jennifer Smith

University of Texas—San Antonio

Microplastic (1-5 mm) pollution (MPP) is of increasing concern in terrestrial ecosystems. However, exposure to and impacts of MPP on birds is poorly understood. In urban areas, MPP may represent an environmental justice issue under scenarios where neighborhoods with lower socio-economic status experience higher burdens of MPP due to accumulation of roadside waste, illegal dumps, and historical injustices in waste management facilities locations. Whether birds can be used as an bioindicators of MPP, and thus highlight issues of environmental justice warrants further investigation. As part of the Urban Bird Project, a transdisciplinary community science project that integrates avian ecology, Mexican American Studies and Indigenous studies through research birds and their environments, we assess MP exposure of House Sparrow (*Passer domesticus*), Black-crested Titmouse (*Baeolophus atricristatus*), Bewick's Wren (*Thryomanes bewickii*), and Carolina Wren (*Thryothorus ludovicianus*) nestlings across a socioeconomic gradient in San Antonio, TX. Nestboxes were set up in private homes of three different neighborhoods in San Antonio and on The University of Texas San Antonio campus. Participants monitored breeding attempts March-July, 2024 and 2025 following a modified NestWatch protocol. We collected fecal samples on day 10 post-hatch and nests following the completion of the breeding season, analyzing both for plastic content. Results suggest that nestlings across the socioeconomic gradient ingested MPs, but socioeconomic status of the neighborhood did not influence MP exposure. Similarly, while plastic as a percentage of nest weight ranged from 0- 7.42% (n=25), socioeconomic status of the neighborhood had no discernable effect. This study highlights that urban-nesting birds are widely exposed to MPs.

730A1   **Haemosporidian parasites circulating in owl populations from northeastern region of North America**

M. Andreína Pacheco, Erica A. Miller, Francisco C. Ferreira, Scott Beckerman, Mitchell Oswald, Nohra E. Mateus-Pinilla, & Ananias A. Escalante.

Temple University

Haemosporidians (Order Haemosporida, Phylum Apicomplexa) are a diverse clade of vector-borne parasites found in almost all terrestrial ecosystems. Although avian haemosporidian diversity has been extensively investigated, only few studies have focused on non-passerines, especially raptors from North America. Here, taking advantage of injured/dead owls from rehabilitation centers of the northeastern region of USA, 55 owls belonging to six species (Great Horned, Barred, Eastern Screech, Snowy, Northern Saw-whet, and Barn Owls) were screened for haemosporidians using a nested Polymerase Chain Reaction (PCR) for all samples and microscopy for those with available blood smears. Parasite mitochondrial genomes were obtained using a new long-read mitochondrial-genome protocol (PacBio HiFi). In total, 21 owls belonging to three species were positive for haemosporidians. The infected species were the Great Horned Owl (14/18, 77.8%), the Eastern Screech Owl (3/5, 60%), %), and the Barred Owl (4/9, 44.4%). All three species were infected with Haemoproteus species, and in the case of the Great Horned Owl, three individuals had a mixed infection with Leucocytozoon and Plasmodium species. This study identified one Plasmodium, three Haemoproteus, and four Leucocytozoon lineages, with one Haemoproteus and one Leucocytozoon lineage being new to science. Using microscopy and molecular data, a lineage of the *Haemoproteus* syrnii, an owl parasite circulating in Europe, was identified in all 14 Great Horned and two Barred Owls. This is the first report of this parasite in North America. Overall, this study contributes new knowledge to a better understanding of haemosporidian parasite biodiversity infecting owls.

731B1   Analysis of human-fed Perisoreus canadensis nest predation pressure on Northeast alpine songbirds

Marielle Postava-Davignon, Nicholas P. D'Antonio, & Jennifer A. Long

University of Maine at Augusta

Canada Jays (*Perisoreus canadensis*) occupy boreal forests, particularly in alpine zones of the Northeast US. They are opportunistic feeders and have grown accustomed to regularly eating human food. Previous work in our research group has demonstrated that jays in areas with high amounts of human feeding find artificial nests faster, and prey on more of them than in comparable areas with less feeding. They are also more likely to come in close proximity to humans and take food that is offered. As a result, we hypothesized that areas of high human feeding draw a larger number of jays to popular recreation areas, and this puts higher predation pressure on nesting songbirds. In this study, we examined whether higher predation pressure has influenced songbird species richness, or the presence of sensitive alpine nesting species such as Blackpoll Warbler (*Setophaga striata*) and Bicknell's Thrush (*Catharus bicknelli*). We deployed Wildlife Acoustics Song Meters for 3 days at 33 sites in Maine and New Hampshire. Recordings were taken for two hours at dawn and dusk, and analyzed using Kaleidoscope Pro. We identified all species present at each site, and compared sites that experience high amounts of human feeding to sites with little to no human interactions. Amounts of human interactions were quantified based on confirmed sightings from social media, eBird, iNaturalist, and our Northeast Canada Jay Survey. Our results are the first in our area to provide information for management decisions regarding human feeding of nest predators, and the conservation implications for threatened songbirds.

730A1   Tick infestation consequences for Ohio Appalachian breeding birds

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

The Ohio State University

Tick populations are on the rise in Ohio Appalachia accompanied with an increase of human tick-borne disease cases. Birds are identified as potential competent reservoirs for tick-borne pathogens, and neotropical migrants are essential transport vehicles for both ticks and their diseases. Though the impacts on nest success are unknown, birds experience physiological impacts due to tick blood feeding which can disrupt their breeding ecology. My project explores how tick infestation impacts nest success in four focal species depending on the height of nest sites and adult foraging habits. I predict that adults and nestlings of species who forage and nest closest to the ground in tick-infested leaf litter and shrubs [Ovenbird (*Seiurus aurocapilla*), Hooded Warbler (*Setophaga citrina*)] will experience relatively higher levels of tick infestation compared to mid-story nesting and foraging species [Wood Thrush (*Hylocichla mustelina*)] and those with no ground contact while foraging and nesting in the canopy [Red-eyed Vireo (*Vireo olivaceous*)]. In 2024 and 2025, I will find and monitor nests to determine nest success and check adult parents and their chicks for ticks. In 2024, preliminary results had total of 62 nests found with ticks present on 38.9% of chicks in mid-story nesters and on 41.7% of ground nesters. In 2025, I will continue nest searching and monitoring for the four focal species at 2024's sites at Vinton Furnace State Experimental Forest near Zaleski, Ohio. This project will fill a knowledge gap to understand which species are vulnerable to high tick burdens that could impact nest success.

730A1   Investigating migration strategies, Haemosporidian infection and fitness consequences in a partial migrant population

Sarah Scott & Julie Heath

Boise State University

Migration shapes host-pathogen dynamics, which may create differential infection consequences for individuals in a partial migrant population. We aimed to test the hypothesis that migration strategy affects pathogen prevalence by comparing Haemosporidian loads and diversity between migrant and resident American Kestrels (*Falco sparverius*) in a partial migrant population. Further, we examined associations between Haemosporidian infection, sex, and individual condition (telomere length), as well as how Haemosporidian infection varies across the annual cycle and between years in both migrants and residents. We analyzed historic (2009-2012, n=200) and contemporary (2023-2025, n=200) samples to examine temporal patterns of infection. Telomere length, infection status and parasite load (Plasmodium, Leucocytozoon, Haemoproteus) were determined using quantitative PCR. Migratory strategy was determined using stable isotope analysis. Preliminary results reveal high rates of infection and the presence of co-infections in breeding kestrels with differential infection loads between sexes. Investigation of pathogens in this population will result in a better understanding of the burden of infection on individuals, parasite prevalence across the annual cycle for migrant and resident individuals, and changes in an avian disease system across time periods.

730A2   Development of a standardized 13-point fat-classing scheme for landbird migration for multiple level uses

Mark Shieldcastle

Black Swamp Bird Observatory

Accurate measurement of lipid deposits in birds is essential for understanding their health, energy reserves, and overall fitness, particularly during migratory periods. Traditionally, lipid levels have been assessed during migration through a variety of visual assessment methods that are quite variable in technique, subjective, and time-consuming in operation. A robust, replicable, and easy-to-use method to quantify lipid reserves is important to implement across the range of migrating landbirds. In this study, we explore the potential of a modified visual assessment as a non-invasive method for estimating bird lipid deposits and improved analytics. Using a combination of external body condition scoring and graphic interpretation, we developed a reliable 13-point system for visual evaluation of lipid levels across various bird species that reduces subjectivity and increases accuracy. Our findings indicate an improved correlation between visual assessments of lipids and bird mass, highlighting the effectiveness of this method in field conditions. This approach offers a practical alternative for large-scale studies on avian health and energetics, particularly in situations where minimizing bird handling is crucial. We discuss the implications of these results for ornithological research, conservation efforts, and wildlife management strategies.

730A2   Vegetation survey for banding and point count stations to provide visibility corrections and a climate change index

Mark Shieldcastle

Black Swamp Bird Observatory

Migration is a critical period for avian species, and understanding the relationship between vegetation density and bird abundance during this time is essential for improving the accuracy of point count data. This study presents a novel survey method designed to quantify vegetation density during bird migration and assess how changes in vegetation structure influence point count results. To strengthen conclusions, it is advantageous to try and reduce confounding variables to help methods (point counts and banding) be more informative and comparable. A specific hindrance to point count data is the changes in visibility that occur throughout the migration season. By comparing point count data with varying levels of vegetation density, we aim to create a correction factor that makes point count data more comparable to banding data by accounting for seasonal fluctuations and vegetation growth cycles. The findings provide valuable insights into how vegetation density may impact the detection and abundance estimates of migrating birds, ultimately informing more robust avian monitoring and conservation efforts. This approach offers a replicable framework for integrating habitat assessments into migration studies, enhancing the ecological interpretation of point count data. In addition, this method can provide for an annual standalone leaf out and leaf down parameter that will be useful in monitoring potential climate changes to temporal vegetation development.

731B1   The Urban Bird Project: Participatory science through backyard bird feeding and culturally responsive approaches

Jennifer Smith, Lauren Granger, & Amelia King-Kostelac

Caesar Kleberg Wildlife Research Institute, TAMUK

Participatory science is a powerful method of informal science education that has expanded scientific literacy. At the same time, it can positively affect participants through increasing their knowledge of, and appreciation for, the natural world; this may be especially important in urban areas where people are increasingly disconnected from nature. Yet, members of underserved minoritized communities often face barriers to participation in such programs. Moreover, participatory science methods often fail to integrate culturally responsive approaches that are proven to positively influence learning in members of minoritized communities. The 'Urban Bird Project' (UBP) aims to minimize these challenges by transforming urban yards in underserved minoritized neighborhoods of San Antonio into living laboratories to assess the effects of backyard bird feeding on the space use of two culturally relevant species, the Northern Cardinal (*Cardinalis cardinalis*) and the Northern Mockingbird (*Mimus polyglottos*). Between 2022 and 2023 we successfully recruited 32 households and three middle schools to UBP. In collaboration with participants, we collected data via backyard bird feeding, mist-netting, and observations. We assessed the effects of UBP on community members using an approach centered on the Strands of Learning Framework. Specifically, we assessed the impact of our approach on (1) interest and motivation to learn about birds, (2) knowledge about birds, (3) connection with birds and the natural world, and (4) science identity. We will present the results from this study and use them to provide recommendations for future participatory science efforts that aim to address barriers to participation by underserved minoritized communities.

731A2   **Exposure of terrestrial birds to microplastic: The effects of ecological traits**

Jennifer Smith, Alexis Baum, Heather Prestridge, & Zach Tonzetich

Caesar Kleberg Wildlife Research Institute, TAMUK

Microplastics exposure and the associated effects are well documented in marine taxa including seabirds. Despite plastic pollution being pervasive in terrestrial ecosystems, relatively little is known about the potential exposure of terrestrial birds to microplastics. Moreover, whether bird species are differentially exposed based on ecological traits is largely unknown. This study aims (1) to investigate the exposure of terrestrial birds to microplastics by examining gastrointestinal (GI) contents, and (2) to explore relationships between microplastic exposure, diet types, and foraging strategies. Nine species representing a range of diet types and foraging strategies were opportunistically collected via bird-building collision surveys in Texas: the Ruby-throated Hummingbird (*Archilochus* colubris), Cedar Waxwing (*Bombycilla cedrorum*), Common Yellowthroat (*Geothlypis trichas*), Nashville Warbler (*Leiothlypis ruficapilla*), Black-and-white Warbler (*Mniotilta varia*), Great-tailed Grackle (*Quiscalus mexicanus*), House Wren (*Troglodytes* aedon), and White-throated Sparrow (*Zonotrichia albicollis*). By examining microplastic abundance in GI tracts we found that the majority of birds were exposed to microplastics. Great-tailed Grackles (a ground-foraging omnivore) had the highest exposure followed by Cedar Waxwing (a foliage gleaning frugivore), and Purple Martin (an aerial insectivore). In comparison, insectivorous species characterized as foliage gleaners (e.g., Nashville Warblers) had the least amounts of microplastics in their GI tracts. Our results showcase that a traits-based approach can be valuable when predicting microplastic exposure in terrestrial birds. By identifying linkages between microplastic exposure and ecological traits, our results provide insight into the pathways through which terrestrial birds are exposed to microplastics and thus can be used to inform strategies that aim to minimize exposure.

730A2   **MAPSNET: A verification system for Monitoring Avian Productivity and Survivorship (MAPS) banding data**

Joe Weiss[1] & Danielle Kaschube[2]

[1]*Tungite Labs,* [2]*The Institute for Bird Populations*

The Institute for Bird Populations (IBP) and Tungite Labs have created a new banding data cleaning and verification program—MAPSNet—for use by contributors to the Monitoring Avian Productivity and Survivorship (MAPS) program. The previous iteration of IBP's data cleanup system, MAPSPROG, cleaned data well but was written on an outdated platform. It was difficult to update, incompatible with macOS, and could no longer be installed on many federal or state computers due to increasingly strict security protocols. The new MAPSNet system is cloud-based, making data immediately available for analysis. MAPSNet allows banders to import CSV files containing MAPS banding, effort, and bird community data entered in Excel or Google Sheets. There are always some errors in data collected in the field, especially with data as complex as bird banding, so it's important to have a way to check it. The routines include data checks that ensure the individual banding data lines are logical within themselves. They also check that records for individuals between captures are consistent and that they agree with other data—i.e., effort and bird community data. This process not only cleans the data but also helps banders identify common mistakes, improving data quality in future years. MAPSNet also provides banders with a file that can be uploaded to the USGS Bander Portal, streamlining compliance with permitting requirements.

730A2   **How many birds are enough? Estimating minimum sample sizes for site-level songbird survival and productivity**

Veronica Winter, Bik Wheeler, & Allyson K. Jackson

Pennsylvania State University

Songbirds hold significant social and ecological value. Songbirds are important indicators in systems due to their sensitivity to environmental changes, and long-term monitoring is essential for understanding baseline conditions and implementing effective management strategies. A widely used protocol for monitoring is the Monitoring Avian Productivity and Survivorship (MAPS) program, which provides valuable insights on a continental scale. However, its effectiveness in informing site-level estimates is unknown. Therefore, understanding the minimum number of birds required to accurately estimate demographic parameters for target species is useful, particularly for areas where there is a concern over the number of birds that may be captured year to year. We explore the minimum captures needed to estimate survival using data from six established MAPS stations from 1996–2008, focusing on four species: the Black-throated Green Warbler (n=123), Black-capped Chickadee (n=64), Hermit Thrush (n=90), and Red-eyed Vireo (n=107). We fit a Bayesian Cormack-Jolly Seber model in NIMBLE to evaluate various sample sizes, assessing posterior estimates to identify the minimum needed for reliable survival estimates. Our analysis revealed that we can estimate apparent survival with n=2 captures for each species, which varying levels of uncertainty around these estimates. This project offers essential building-block information to assist managers in understanding site-level survival and productivity while establishing long-term bird monitoring programs for songbird populations.

730A2   Assessment of an automated telemetry grid network for radiotracking birds in a complex environment

Stefan Woltmann

Austin Peay State University

Understanding habitat use patterns of individual birds requires spatial data on where a bird is at various points in time. Radiotelemetry is a valuable technique for "putting dots on a map" that allows bird locations to be associated with habitat and other environmental variables. Handheld telemetry is a tried-and-true technique, but is also labor intensive. Newer automated telemetry systems allow for the collection of huge amounts of data (because they can collect data continuously), but there can be challenges in extracting the best information from such data. The Emerald Hill Telemetry Station on the campus of Austin Peay State University in central Tennessee consists of a base station (CTT Sensor Gnome) and a network of 15 sensors (CTT Nodes) over a 10-ha study area that record detections of radio tags continuously. I designed a study to test the ability of the system to estimate locations of radio tags placed at known locations. I compare both multilateration and fingerprint approaches to ask how precisely these approaches estimate tag locations in an environment that includes complex topography, heterogenous vegetation, and buildings – all of which can affect the ability of radio signals to travel and be detected by a sensor.

730B2   Home range estimation and resource selection of Pinyon Jays in the Colorado Plateau of Utah and northern New Mexico

Hannah Wright, Scott G. Somershoe, Russell Norvell, Corrie C. Borgman, Scott Gibson, & Clark S. Rushing

University of Georgia

The Pinyon Jay (*Gymnorhinus cyanocephalus*) has the fastest rate of decline of any pinyon-juniper obligate bird and knowledge about the environmental factors contributing to these declines is severely lacking. Pinyon Jays are estimated to have declined at a consistent rate of 3-4% per year, resulting in an estimated 85% total population loss since 1967. This trend and lack of information of the causes has resulted in the species gaining conservation concern in recent years. The pinyon-juniper woodlands habitat that this species relies on is the subject of removal by state and federal agencies as it is considered less desirable than sagebrush ecosystems, or cleared land, for other target species such as Greater Sage-Grouse, Elk, and Mule Deer. Through the work of this project, our objectives were to 1) quantify movement patterns through location data collected by GPS tags attached to individuals 2) estimate home range size and resource selection of individuals and 3) relate the contemporary treatment history to these estimates. Using information from individuals captured in 2023 (n =11) and 2024 (n=58) we calculated home range size using autocorrelated kernel density estimates and estimated the response of individuals to management history and environmental conditions using generalized linear mixed models.

730B2   Spatial distributions of sonic boom intensity and protected species in Southern California

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The recent space industry boom has increased the frequency of rocket launches. For example, at the Vandenberg Space Force Base located near Lompoc, California, SpaceX, a rocket manufacturer company, launched more than 50 orbital rockets in 2024 and they are targeting 100 launches per year in the next few years. The rocket launches increase the exposure of species to high amplitude anthropogenic noise that may be a stress factor. Our research objective is to document the spatial overlap of the sonic booms from rocket launches on species protected by law, inhabiting Southern California. To achieve this objective, we compiled spatial information of sonic boom measurements and species spatial distributions in ArcGIS to visualize the intensity of the sonic booms and the number of species present. Our spatial analysis contains acoustic intensity measures from sonic booms from 10 different rocket launches spanning June, 2024 to January, 2025 and the state and federally threatened and endangered species that occur in our study area. Our analysis will allow for further conservation and management related research to determine specific places of interest based on species richness and sonic boom intensity.

P01 **Microplastics in Northern Gulf of Mexico waterfowl**

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Texas A&M University

Microplastics (1-5 mm) are small plastic particles that enter ecosystems through diverse pathways, posing physical and toxicological threats to wildlife and humans due to their ease of ingestion. The Gulf of Mexico, characterized by numerous plastic production facilities along its northern coast, reports some of the highest microplastic concentrations globally. Despite this, little is known about microplastic ingestion in Gulf waterfowl, representing a significant knowledge gap in regional avian ecology. This study assesses microplastic ingestion frequency, quantities, and associated risk factors in hunter-donated waterfowl from Texas and Louisiana. Ducks were collected during the hunting seasons of 2013-2014 (Louisiana), 2017-2019 (Texas), and 2023-2024 (Texas and Louisiana), with current data reported from the earlier periods. The analysis included both dabbling ducks from Texas and Louisiana and diving ducks from Louisiana. Gastrointestinal tracts underwent dissection, chemical digestion, density separation, filtration, and microscopic examination for microplastics. Our results revealed similar probabilities of microplastic ingestion (~60%) in ducks from both states, regardless of species or year harvested. Fibers overwhelmingly dominated the type of microplastics ingested, whereas nurdles, foils, and foams were minimally observed. Ducks from Louisiana showed generally higher microplastic burdens compared to Texas, suggesting possible geographic, temporal, or species-specific influences, though additional data is necessary to confirm these preliminary trends. This research provides foundational insights into microplastic ingestion among Gulf waterfowl, highlighting regional differences and emphasizing the need for expanded monitoring to understand broader ecological implications.

P02 **Scavenging bias in bird-window collision mortality estimates**

Olga Ayala & Corey Riding

Salt Lake Community College

Scavengers can directly interfere with avian mortality estimates by removing bird carcasses between search intervals. We used trail cameras to determine what scavengers are present on the Redwood Campus of Salt Lake Community College in Utah, USA. We deployed 10 cameras near campus buildings during four seasonal bouts (spring, summer, fall, winter) of two weeks each. We baited half the cameras at the start of the second week in spring, fall, and winter. During this year-long study, we recorded >7000 motion-activated images and >500 days of set-interval images. Nearly all scavengers detected were domestic cat (Felis catus), although fox squirrel (Sciurus niger) was also recorded. Several cats were detected at multiple locations, indicating a high level of scavenging leading to undercounts of avian collision mortality on campus.

P03 **Urbanization, colony proximity, and juvenile survival of California Gulls (*Larus californicus*) at the Great Salt Lake**

Kenton James Bustin & John Cavitt

Weber State University

Saline lakes worldwide are in serious decline. The Great Salt Lake (GSL) is no exception having reached a historic low elevation on July 3, 2022. The GSL is a critical stopover and breeding site for migratory waterbirds, supporting large breeding colonies of species such as the California Gull (*Larus californicus*). However, prolonged drought as well as unsustainable water use and diversion have led to chronic low lake elevations. This has resulted in the abandonment of historic colonies where nesting sites are now contiguous with the shoreline. These hydrological changes have also impacted food availability across the landscape. Colonies located near urbanized areas on the eastern lake margin may offer more consistent anthropogenic food resources, yet previous studies suggest this may come at the cost of juvenile survival. We investigated how colony proximity to urban development influences the survival and habitat use of juvenile California Gulls. Using CTT HybridTag Leg Bands integrated with the Motus Wildlife Tracking System, we tracked juveniles from four colonies spanning a gradient of urban proximity. We evaluated daily survival rates, foraging distances, and timing of colony departure. Our findings offer important insights into the ecological trade-offs associated with urban-adjacent breeding and have direct implications for managing colonial waterbirds under increasing hydrological and land-use pressures.

P04   **Catching flycatchers: Exploring congruence of field and molecular identifications of Empidonax flycatchers**

Amy Buxton, Rodolfo Probst, Kyle Kittelberger, Hailey Blair, & Çağan Şekercioğlu

University of Utah

Recent avian extinctions and population declines highlight the importance of long-term bird monitoring data, such as those collected from bird banding. Accurate species identification is essential for collecting high-quality banding data, which can be challenging for phenotypically similar taxa such as Empidonax flycatchers (Tyrannidae). We used blood and feather samples collected from Empidonax individuals during bird banding in Southeastern Utah from 2013 to 2017 to investigate the concordance between in-hand field identifications and molecular identifications using DNA barcoding. Banders captured Empidonax flycatchers at the Bonderman Field Station at Rio Mesa, Utah, identified them in-hand using morphometric characters, and collected a blood and/or feather sample from each individual. We extracted DNA from 96 birds and amplified a barcoding region of approximately 400 base pairs from the mitochondrial cytochrome c oxidase (COI) marker. Our newly generated DNA barcodes were combined with other Empidonax barcodes from the Barcode of Life Database (BOLD) and used to build a phylogeny and determine molecular identifications. Field identifications were congruent with molecular identifications for 93% of individuals. This suggests that, despite their phenotypic similarity, Empidonax flycatchers can often be reliably identified in the field when detailed morphometric criteria are used. Molecular techniques such as DNA barcoding may be valuable for verifying field identifications, especially in cases involving closely related, rarely encountered, or morphologically ambiguous species.

P05   **Understanding fine-scale habitat use of Slate-colored Juncos (*Junco hyemalis*) in residential areas**

Rain Carman, Jacob Morgan, & Kelly Williams

Ohio University

Since 1970, anthropogenic changes in land use have contributed to the loss of 2.9 billion birds across North America, with a 28% loss in migratory bird species. Habitat loss, fragmentation, and degradation are key factors driving these declines, particularly in areas like Ohio where most land is privately owned. While many bird species have been observed in urban/suburban environments, there are still knowledge gaps in our understanding of how birds use residential areas within urban and suburban areas, especially during the overwintering period. We used manual radiotelemetry to quantify overwinter habitat use of Slate-colored Juncos (*Junco hyemalis*; n = 23) during the winter of 2025 around two urban/suburban sites in southeastern Ohio and mapped bird feeders on the landscape. We determined how Juncos used habitat patches including green space (trees and shrubs), lawn, buildings, and other impervious surfaces, and estimated home range sizes and habitat selection ratios. We used a general linear mixed effects model to determine whether habitat use, temperature, and sex predicted distance to bird feeders. We expected that Juncos would avoid impervious surfaces and select habitat patches with greater amounts of green space. Additionally, we predicted that Juncos would use green space closer to bird feeders, distance to bird feeder would be shorter at colder temperatures, and home range sizes would be smaller with increased bird feeder density. Determining how birds use urban and suburban areas during the non-breeding period will provide management recommendations for private landowners to maximize the benefits of residential areas as overwintering habitat.

P06   **Landscape-scale influences on the value of shade coffee to birds in the Panamanian Highlands**

Leah Crenshaw, Ruth Bennett, & Amanda Rodewald

Cornell University

Declining populations of migratory birds have created an urgent need to identify conservation solutions that accommodate social and environmental needs. Shade-grown coffee is one solution that can support human livelihood and bird populations. Most research on shade-grown coffee has focused on farm-level characteristics and their effect on avian abundance and diversity. We still poorly understand how environmental attributes at larger spatial scales influence bird communities in coffee. Our research fills this gap by investigating how local- and landscape-scale habitat characteristics influence mixed-species flock composition and individual bird condition on coffee farms and forests in the Panamanian Highlands. We ask (1) how does mixed-species foraging flock composition vary with local and landscape attributes? To answer this question, we conduct transect surveys for mixed-species foraging flocks across the same site gradient. We also ask (2) how does individual condition vary with agricultural intensity at local and landscape scales? To answer this question, we utilize a body condition index that incorporates wing length, tarsus, fat score, pectoral muscle score, and pectoral muscle development in birds captured in coffee farms and forest across a landscape fragmentation gradient. Data collection is currently underway in Gualaca District, Chiriquí, Panamá. We will collect vertical vegetation structure and remotely-sensed land cover data to model the relationships between habitat, mixed-species flock composition, and individual condition. This work will elucidate the multi-scale relationships between bird communities and agroforestry practices and help to refine sustainable agriculture practices in coffee.

P07   **Threatened grassland birds: What do "Capuchinos" populations reveal about conservation?**

Filipe P. Bernardi, Luis Eduardo S. dos Santos, Mariana L. Gonçalves, Jonas R. R. Rosoni, Eduardo Chiarani, Márcio Repenning, Ismael Franz, Marcelo M. Weber, & **Carla S. Fontana**

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Grassland birds face significant threats due to increased human activities. In southern South America, seedeaters of the "capuchinos" group (*Sporophila* spp.) are highly threatened by habitat loss. Of the 10 known species, seven are globally threatened. Studies over the last 15 years (~ 400 nests) suggest that conserving these species requires (1) local actions in breeding areas and (2) actions that respect population specificities, as exemplified by the following statements. There are differences in the period of the breeding season comparing populations of *S. hypoxantha* and *S. pileata*, as well as a 15% lower hatching rate between *S. pileata* of Pampa and Cerrado. The latter species also nests in areas of agricultural and cattle production, suggesting that it is possible to reconcile successful breeding with animal and grain production if adjusting the animal load and preserving native areas in crops, besides other good practices. One population of *S. ruficollis* used *Cirsium vulgare*, an exotic plant, as a nest support with a frequency of 42% (n = 45), probably reducing predation. *S. cinnamomea* had the only record of nest parasitism. Six species have a consistent pattern renesting attempts ($\bar{X}$=3). *S. melanogaster* depends on both bogs and grasslands in the highlands, although it is often referred to as a marsh species. The capuchinos with a known migratory route migrate through the Paraná-Paraguay system towards central Brazil, a singular route. It is essential to consider specificities for the southern capuchino's conservation. Population differences should be considered when creating regional and global conservation strategies

P08   **The influence of a periodical Cicada emergence on the body condition of Veeries**

Abbee Fries

Kutztown University

Periodical Cicadas (*Magicicada* species) spend 13 or 17 years as nymphs underground where they feed on the roots of trees. Millions of adult cicadas emerge synchronously in forested areas in spring to saturate predators and breed. Cicadas provide an abundant food source for many birds and may lead to bird population increases in future years. However, little is known about how periodical cicadas influence bird body condition and fat levels during an emergence year. In this study, we compared body condition (mass/wing length) and fat levels of Veeries (*Catharus* fuscescens), a forest songbird, in a periodical cicada emergence year (2021) to the adjacent years without this potential superabundant food source. We found that Veery age did not influence body condition or fat level, but body condition differed significantly by sex, so we compared trends separately for males and females. For both males and females body condition and fat levels were not significantly different in the cicada emergence year compared to adjacent years. Surprisingly, there was no evidence that cicada availability led to improved body condition or fat stores. Because Veeries are ground foragers, we suspect that cicadas were only available to them as a food source for a short period of time as nymphs. Once the cicadas emerge as adults, they fly into the tree canopy to breed and were no longer available to Veeries as prey. Future research should examine other bird species with different foraging niches.

P09   **Effects of human interaction on Canada Jay (*Perisoreus canadensis*) behavior and nest predation**

David Glass, Sullivan O'Keeffe, Nicholas P. D'Antonio, Jennifer A. Long, & Marielle A. Postava-Davignon

University of Maine at Augusta

Regular feeding has led Canada Jays to become used to interacting with humans, regularly coming up to people in search of food. They do not migrate and survive the winter by caching hundreds of food morsels across their territory. These birds have a diverse diet which includes songbird eggs and nestlings. There is concern that supplemental feeding will increase the predation pressure on songbird nests within their alpine ranges. This study investigates whether human interaction affects Canada Jay behavior and propensity for nest predation by comparing high human interaction sites, where feeding is well documented, with lower interaction sites. To categorize sites we collected data from outdoor recreationists on social media, iNaturalist, eBird, and an online survey we created and sent to local hiking and birding organizations. In May and June 2022-2024 we studied jay behavior and nest predation in response to human interaction and decoy nests dispersed across 33 sites in New Hampshire and Maine. We collected forestry data in order to examine habitat composition between sites. Initial results show jays are bolder in high interaction areas, approaching and following recreationalists and taking food from their hand, and they find decoy nests more often and within less time. This contrasts with trends in areas with low interaction where jays display little or no interest in humans, and find nests at a much lower rate in a longer time frame. These findings suggest there could be an impact on nesting songbirds and could be working against conservation efforts.

P10 **Parental investment and paternity in the Black-throated Blue Warbler**

Brian Hofstetter, Mike Webster, & Sara Kaiser

Cornell University

Male birds often provide care for young that are not genetically related to themselves in systems with extra-pair mating. Given that this investment does not contribute to fitness benefits, it is possible that males would evolve mechanisms to divert their limited resources exclusively to related offspring. The Black-throated Blue Warbler (*Setophaga caerulescens*) provides an excellent model to study this because it demonstrates high levels of extra-pair mating as well as brood division, in which a portion of the brood is cared for exclusively by one parent during the post-fledging period. We hypothesize that brood division may be a result of male warblers diverting care exclusively to related offspring, or within-pair young (WPY), and avoiding provisioning of unrelated offspring, or extra-pair young (EPY). To test this, we tracked 53 fledglings over three years using radiotelemetry and observed the attending parent. Only seven fledglings were seen being fed by both parents, and this usually represented a switch from a female to a male parent late in the fledglings' development. Using blood samples from both parents and fledglings, we performed ddRADseq and STACKS analysis to determine if fledglings were WPY or EPY. We predict that males will preferentially invest in within-pair offspring, which will provide insight into patterns of fledgling behavior and parental care during the post-fledging period in this species.

P11 **"Generalist insectivorous" birds differ in their consumption of arthropods in Kenyan coffee farms**

Julie Jedlicka, Bailee Romaker, Audrey Lindsteadt, Christopher Watson, & Matthew Johnson

Missouri Western State University

Determining the ecosystem function of high-order predators is critical for evaluation of food web interactions. We mist netted birds found in Kenyan coffee farms at six sites from Dec 2019- Jan 2020. We collected fecal samples from 23 different species for DNA extraction and next-generation sequencing. While we did not find evidence of predation on the most significant coffee pest, the coffee berry borer by the birds, the species that have the highest number of replicates include Eurasian Blackcap (EUBL, n= 18) and Pale White-eye (PAWE, n= 15). When looking at just these species and their diets classified by order, a PERMANOVA with species and site found that there were significant differences in diet but not site. EUBL and PAWE diets were 71.3% dissimilar, driven by an increased Lepidopteran by PAWE and a lower Dipteran and Sarcoptiformes consumption compared to EUBL. Zooming in and categorizing diet items by family, EUBL and PAWE diets were on average 90.9% dissimilar, driven by an increased Noctuidae and Crambidae by PAWE and a lower Chironomidae consumption compared to EUBL. Our data reveal how prey items are categorized (order, family, or genus) has a meaningful effect on whether there are significant differences in the diets.

P12 **Black Swift (*Cypseloides niger*) Distribution and Population Estimate in Utah**

Connor Johnson

Weber State University

The Black Swift (*Cypseloides niger*) is a rare threatened species of swift known to nest locally in Utah. The bird is considered at risk in Utah due to a likely small population and extremely restrictive nesting requirements. Despite this, no formal survey has ever been conducted. Across the 2025 breeding season, I conducted state-wide surveys at historical and potential nesting sites. Each site was surveyed at dawn and dusk twice, and estimates of colony sizes were taken. This data provides valuable information on population size and distribution throughout Utah, allowing for population declines to be observed, and for proper conservation measures to be taken.

P13   **Nestbox success rates between two types of nest boxes over a three-year period**

Teri Larison, Mack Sorrells, Amber Spradley, Angel Justus, Stacy Barnes, Dakota Ballard, Jacobo Barriga, Marissa Gruetze, Jessica Poush, Alyka Zahnd, & Julie Jedlicka

Missouri Western State University

Nest boxes are an important tool for bird conservation and for population studies. Missouri Western State University has 62 passerine nest boxes (31 Schwegler boxes and 31 predator-proof boxes) established in pairs on campus in February 2022. From mid-March through July these boxes were checked twice a week for signs of occupancy and nesting success. We tested the hypothesis that nesting success would be higher in predator-proof boxes than in Schwegler boxes. As birds from previous years hopefully return back to the area, I expected the number of successful nesting attempts in predator-proof boxes to increase annually as more birds returned to use predator-proof boxes. We analyzed occupancy data from Eastern Bluebird (*Sialia* sialis), Black-capped Chickadee (*Poecile atricapillus*), Northern House Wren (*Troglodytes* aedon), and Carolina Wren (*Thryothorus* ludovicianus). Nesting success was higher in predator-proof boxes than Schwegler boxes in each of the three monitored years. In 2024, predator-proof boxes had a 85% success rate compared to Schwegler boxes' 79%. However, over those three years, the number of nesting attempts has continuously decreased in predator-proof boxes whereas nesting attempts in Schwegler boxes had increased from 21 in 2022 to 33 in 2023 before dropping to 29 in 2024.Three years is a short monitoring time, so over a longer time period there may be a stronger statistical relationship showing an increase or decrease in nest box success rate and usage. Testing whether predator proof boxes are really predator proof has important implications for avian conservation and nest box programs globally.

P14   **What the pluck? Differences in diets of red versus gray Eastern Screech Owls (*Megascops asio*)**

Eric Liebgold

Salisbury University

In many color polymorphic species, color influences camouflage from predators and/or defensive behavior, but whether color morph affects the type of prey is typically unknown. The Eastern Screech Owl is a small species of owl found in Eastern North America that is color polymorphic, with red and gray owls present in the same populations. To understand the potential effects of color polymorphism on diet, we checked artificial bird boxes suitable for owl winter roosting from 2020 to 2023, taking note of the color of Eastern Screech Owls found as well as any prey remains left in the box such as carcasses or prey's feathers. We found that 90% of red owls' diet consisted of bird prey while gray owls had significantly less avian prey (62%) and more amphibian prey (31%) in their diet. While the color morphs differed in the proportions of higher order taxa prey, there was no significant difference in the proportions of bird species in the avian portion of their diets. The differences in diet between the color morphs was potentially due to colors' differential camouflage when hunting in different habitats or light regimes. Camouflage during hunting may therefore be an underlying evolutionary cause of the persistence of color polymorphism, not only in this species, but in other color polymorphic predators.

P15   **Stronger sociality may lead to greater foraging efficiency among wintering Common Loons (*Gavia immer*)**

Jay Mager, Sherry Abts, Declan Brady, Carly Bricker, Matthew Kmieske, Brooks Wade, & James Paruk

Ohio Northern University

While most Common Loons overwinter in coastal areas of North America, some individuals instead overwinter on freshwater lakes of the southern United States, including Lake Jocassee, a large reservoir in northwest South Carolina that supports an overwintering population of ~130 Common Loons each year. Past studies of these individuals indicate that they exhibit strong site fidelity, but also vary in their degree of sociality. Some individuals are solitary, spending <20% with conspecifics, while others are loosely-social, spending 20-70% of their time with conspecifics, and others tend to strongly social, spending >70% with conspecifics. From an investigation of the time-activity budgets of 171 focal individuals between 2018 and 2024, we found that foraging behaviors of these loons varied with their degree of sociality. Strongly social individuals (n=49) spent a lower proportion of their time foraging relative to loosely social (n=41) and solitary individuals (n=81; ANOVA $F_{2,168}$ = 11.69; $P < 0.0001$), but encountered and fed upon schools of small-sized forage fish more frequently ($F_{2,168}$ = 5.74; $P < 0.01$). As schools of forage fish tend to be found closer to the water surface, strongly social individuals also dove more frequently ($F_{2,165}$ = 15.18; $P < 0.0001$) and made shorter dives ($F_{2,165}$ = 5.74; $P < 0.0001$) to fed upon them, at times in an apparently cooperative manner. These findings may reflect potential benefits of sociality associated with enhanced foraging efficiency, and draw into question the trade-offs associated with solitary and social behavior of loons during the nonbreeding season.

P16   Window pain: A survey of avian window collisions on Ohio University's Athens Campus

Molly Murphy & Savanna Singer

Ohio University

Approximately one billion birds collide with windows each year resulting in avian mortality. Most birds see and use ultraviolet light for foraging and orientation, which can lead to collisions with highly reflective windows, especially windows that reflect green space. During the fall and spring semesters of 2023-2025, we monitored 17 buildings on campus by walking building perimeters in search of dead birds. We recorded species, location and date for each bird mortality. We found 54 dead birds at 14 of the 17 buildings. Ping Recreation Center and Heritage Hall had the highest number of mortalities. During fall semester, birds from the family Parulidae had the highest number of mortalities, whereas birds from the family Turdidae collided most frequently during spring semester. We used ImageJ to calculate the glass surface area for each building and tested the hypothesis that increased glass surface area was associated with increased avian mortality. We predicted that buildings with larger glass facades would have more mortalities. Identifying buildings with high avian mortality from collisions will help us to prioritize and recommend preventative measures. Our study aims to raise awareness of this preventable conservation issue and highlight the actions that individuals and institutions can take to prevent avian mortalities.

P17   Pampas Meadowlark´s home range of females during the nestlings' rearing

Maria Candelaria Neyra, Pablo Gervasio Grilli, Marcos Juárez, & Igor Berkunsky

Instituto Multidisciplinario sobre Ecosistemas y Desarrollo Sustentable, UNCPBA

Pampas Meadowlark (*Leistes defilippii*), endemic to South American grasslands, has lost 90% of its historical range due to habitat loss and is now restricted to southwest Buenos Aires Province, Argentina. Understanding its breeding biology is crucial for effective conservation. Since 2021, we have been conducting a conservation management project to increase its population size. The objective of this work was to determine the area requirements of females during the nestling rearing. Between October and December 2024, we captured and GPS-tagged 11 females, 10 of which were actively rearing nestlings, and one male. GPS VHF tags recorded positions at 30-minute intervals (eight females) or 10-minute intervals (three females). We estimated home range size, perimeter, and shape using the local convex hull (LoCoH) method in QGIS. The foraging home range of rearing females averaged 6.45 ± 1.53 ha (0.09–15.13 ha, n = 10), with a perimeter of 1,195 ± 230 m and a shape index of 4.97 ± 0.38. The non-rearing female had a 0.26 ha home range, while the rearing male's was 1.32 ha. These are the first home range estimates for the species and the first application of GPS tracking in its study in Argentina. We also developed a capture and tagging protocol for future research. Our findings provide key insights for conservation strategies and habitat management.

P18   Habitat suitability model of the Chestnut-sided Warbler (*Setophaga pensylvanica*) - a pilot study

Dorian Rose & Amanda Suzzi-Simmons

Antioch University New England - Keene, NH

Understanding the breeding habitat of the Chestnut-sided Warbler (*Setophaga pensylvanica*), a declining Neotropical-Nearctic migratory songbird, is critical for effective conservation planning. This pilot study aims to develop a habitat suitability model for the species' breeding range in North America using presence data from the Global Biodiversity Information Facility (GBIF) and environmental covariates. Models will be created and tested using GIS and R. Preliminary findings suggest that suitable breeding habitat is concentrated in the northeastern United States, particularly in New England and the Great Lakes regions, with preference for shrubland and early successional edge habitats. Although these patterns align with general knowledge from community science platforms like eBird, peer-reviewed literature on specific habitat use by this species remains limited. This study provides a baseline for assessing habitat quality and connectivity in a changing climate and lays the groundwork for expanding to a full life cycle model. Future directions include modeling fledgling dispersal, migratory pathways, and wintering habitat use. As an edge and shrubland specialist, the Chestnut-sided Warbler serves as a useful indicator species, and this approach can inform broader conservation strategies for declining early successional bird communities in eastern North America.

P19 **Habitat relationships of breeding grassland birds in Tennessee**

Brianna Saylor & Stefan Woltmann

Austin Peay State University

With the continued decline of grassland birds across North America, understanding their habitat relationships is crucial to making informed management decisions. We examined the habitat relationships of four native breeding grassland bird species in Tennessee: the Bachman's Sparrow (*Peucaea aestivalis*), Eastern Meadowlark (*Sturnella magna*), Grasshopper Sparrow (*Ammodramus savannarum*), and Henslow's Sparrow (*Centronyx henslowii*). These species were selected based on their declining populations and management designations in Tennessee. We selected sampling locations across Tennessee on public lands where the National Land Cover Database land classifications of herbaceous, hay/pasture, and cultivated crops were at least 20 hectares. We performed 6-minute point counts and measured vegetation characteristics such as vegetation density, percent cover, and vegetation height in addition to patch characteristics such as area and perimeter-area ratio. Our analyses will allow us to better understand the patch- and landscape-scale characteristics associated with the presence and abundance of these species. Our study is the first systematic state-wide survey of grassland birds on public lands and will hopefully guide land management practices that will benefit these species.

P20 **Local habitat factors influence warbler dynamic occupancy in the National Park Service's Northern Colorado Plateau Network**

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Vegetation structure and composition are important factors in determining the occurrence of avian species in a given area. As anthropogenic and climate-related changes cause shifts in the availability of suitable habitat, many bird species are responding with measurable range shifts, population declines, and in some instances, local extinctions. The arid southwest is particularly vulnerable to these threats, and both arid-land breeding birds and new world warblers have been identified as groups of conservation concern in recent years. We used 18 years of landbird and vegetation monitoring data from the National Park Service's Northern Colorado Plateau Inventory and Monitoring Network to model the effects of local habitat characteristics on the dynamic occupancy patterns of three warbler species [Black-throated Gray Warbler (*Setophaga nigrescens*), Virginia's Warbler (*Leiothlypis virginiae*), and Yellow Warbler (*Setophaga petechia*)]. We found that canopy cover and pinyon pine abundance had positive effects on both the initial occupancy and colonization rates of Black-throated Gray Warblers, while willow cover was positively associated with local extinction. Virginia's Warbler was strongly associated with Gambel oak cover, which had positive effects on initial occupancy and colonization, and negative effects on extinction. Yellow Warbler initial occupancy was positively related to canopy height, colonization was positively influenced by cottonwood cover, and extinction was negatively related to both ground cover and shrub height. These species-specific relationships will help land managers make informed decisions to reduce the loss of suitable breeding habitat and contribute to local conservation efforts.

P21 **A molecular approach to identify cryptic stonechat species (Muscicapidae: *Saxicola*) with nanopore sequencing**

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The genus *Saxicola* (Muscicapidae) comprises 14 species distributed throughout Africa, Asia, and Europe. These species are differentiated by subtle variations in plumage and vocalizations. However, taxonomists face challenges in correctly identifying *Saxicola* species due to high morphological similarities and overlapping geographic distributions. Although molecular information has been previously employed to clarify species boundaries, results have been limited, and species delimitations remain unresolved. Our research aims to improve the identification of *Saxicola* taxa through DNA barcoding. We focused on three species: *Saxicola maurus*, *S. rubicola*, and *S. torquatus*. Feather samples were collected by the Aras Bird Research Program in eastern Türkiye, a region where all three occur sympatrically. We extracted DNA non-invasively from tail feathers (n=22) and amplified the cytochrome oxidase subunit I (COI) barcoding region. Sequencing was performed using portable nanopore technology. Newly generated barcodes were combined with sequences from the Barcode of Life Database (BOLD) to construct multiple phylogenetic trees. Eight of our samples clustered within a well-supported clade alongside five BOLD barcodes, consistent with the species concept for *S. rubicola*. Thirteen samples, initially identified in the field as *S. maurus*, grouped with BOLD sequences from both *S. torquatus* and *S. maurus*. These findings suggest that our approach, integrating feather- derived DNA and nanopore sequencing, is a promising tool for identifying cryptic *Saxicola* lineages. Moreover, while DNA barcodes resolved *S. rubicola*, they also revealed challenges in distinguishing *S. torquatus* and *S. maurus* in the field – highlighting the need to revisit these taxa to ensure taxonomic stability considering new phylogenetic information.

P22 **The influence of color morph on Eastern Screech Owl survival and home range size**

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Color polymorphism is a phenomenon where individuals within the same species exhibit two or more different, genetically inherited color variations or patterns independent of sex or age. The Eastern Screech Owl (*Megascops asio*) is a color polymorphic owl that exhibits both rufous and gray color morphs. The evolution of color polymorphism in Eastern Screech Owls is not well understood. In this research, I will use mark-recapture data to test whether the two morphs differ in survival. I will also evaluate home range sizes for individuals using GPS data from owls fitted with satellite tags. I predict that the rufous morph will have a higher survival rate than the gray, as they are more common in the study region. Furthermore, I predict that home ranges will vary with space availability, with owls in larger patches of forests having larger home ranges, and vice versa. Understanding the evolutionary function of color polymorphism will provide us with further insight into how species evolve to occupy their niche in the environment, and how changes to those environments may alter species' ability to persist. Additionally, knowing the home ranges of Eastern screech owls will allow us to understand how much habitat they require in order to maintain their populations. Future work will investigate if the color morphs utilize different microhabitats and light regimes within their home ranges.

P23 **Understanding metabolic impacts of light pollution on a free-living, overwintering sparrow**

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Ohio University

Light pollution disrupts circadian rhythms, dysregulates metabolism, and increases nighttime activity in free-living birds. Artificial light at night and nighttime restlessness were associated with decreased levels of the metabolite oxalic acid in Great Tits (*Parus major*), suggesting sleep debt. Slate-colored Juncos (*Junco hyemalis*) overwinter within rural and urban landscapes in the United States and are exposed to varying degrees of light pollution. Beginning January 2025, we collected blood samples from Slate-colored Juncos (n = 76) at three urban/suburban sites affected by light pollution and two rural sites with limited light pollution in Athens County, Ohio. We collected blood samples from Slate-colored Juncos again in March, prior to spring migration. We predicted that oxalic acid levels were lower in Juncos that overwintered in urban/suburban sites compared to rural sites when considering month. Understanding the effects of anthropogenic light pollution on songbirds can help support the directives of Lights Out programs and conservation initiatives.

P24 **Microhabitat features impacting song perch selection by Lazuli Buntings**

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Weber State University

Birds often share close ecological relationships with the plant communities in their habitats. Their use of vegetation as a song post during the breeding season emphasizes the importance of these relationships as a vital part of a bird's reproductive strategy. I gathered data from song posts (n=129) used by singing male Lazuli Buntings (*Passerina amoena*), described at a microhabitat level. These attributes were compared with those from nearby, randomly selected Gambel oak (*Quercus gambelii*) (n=129) due to the fact that all but 2 recorded song posts occurred in Gambel oak. Lazuli Buntings were found to perch on taller trees, at higher points on the trees, and more likely on a dead piece of vegetation than expected by random perch use. They were also found to be more likely to perch on living vegetation as temperature increased. The results of this study shed light on how natural selection has driven behavioral adaptations in Lazuli Buntings and will contribute to our understanding of evolutionary processes in avian ecology.

P25 **Comparing statewide predictions of bird abundance from two different modeling approaches using point count data**

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The Ohio State University

Predictive maps of bird abundance are important tools for conservationists and land managers, but extrapolating occurrence data to large-scale maps presents multiple methodological challenges. Here we compare two modeling techniques to predict statewide bird abundance with the aim of understanding potential for multi-model fusion to enhance predictive ability. We assessed data from breeding bird point counts completed as part of the second Ohio Breeding Bird Atlas (2006-2011). During these point counts (n=14,347) researchers recorded all vocalizing birds observed within five time intervals, assessing the bird's distance from the observer within three distance bands, resulting in 492,285 detections. We used a species-specific combined distance-time removal hierarchical model to estimate bird densities while accounting covariate effects on detection and abundance. We then used these models to predict species abundance statewide. Using the same data, we used a random forest species distribution model to estimate encounter rates, then predicted relative abundance across the state. We will share results from species with frequent statewide detections across a range of habitats (American Robin, n=21,762 detections), frequent detections statewide but in more specific habitats (Red-eyed Vireo, n= 4,156 detections), frequent detections but restricted range (Black-capped Chickadee, n=1,324 detections), and rare detections restricted to specific habitats (Grasshopper Sparrows, n=781 detections). We will evaluate the predictive ability of these two model types to identify areas of uncertainty and regions with high model convergence, highlighting opportunities for further model integration to improve data driven conservation planning.

POSTER PRESENTATIONS