

ASIAN ORNITHOLOGICAL CONFERENCE 2026

Designer:
Chen Xi Sng

It was difficult to choose just a few birds that could represent Asia, but five vibrant and charismatic birds that are featured in the conference talks were selected to be highlighted on the cover page. With the exception of the Peregrine Falcon, all birds featured—the Siberian Crane, Blue-crowned Laughingthrush, Spoon-billed Sandpiper and Javan Green Magpie—are listed as Critically Endangered. With all the threats these precious birds face, our efforts to protect them are all the more important. As the conference takes place in Singapore, the Peregrine Falcon is also featured to spotlight its recent breeding attempts in the local urban landscape. The birds are accompanied by Peranakan tile motifs in the same colours. Similar motifs can be found in historical shophouses and buildings across town, representing Singapore's fusion of different cultures into something beautiful. It is my hope that the conference can be a medium for ornithological research to grow and create a better future for us and the birds we treasure.

Third Asian Ornithological Conference 2026 – Soaring to New Heights in Asian Ornithology

Under the banner “Soaring to New Heights in Asian Ornithology”, the Third Asian Ornithological Conference (AOC) will take place at the National University of Singapore (NUS) from 14 to 17 November 2026.

Held on the green and modern campus of one of the world’s leading universities, the 3rd AOC will connect hundreds of Asian ornithologists from students to eminent global experts. The conference will feature dozens of symposia and hundreds of presentations, showcasing the latest developments in Asian ornithological research and conservation. The highlight of our scientific program will be a series of exciting plenary talks held by some of the most authoritative experts in the field. Please check out our scientific program, including the plenary talks, here: https://www.aoc2026.sg/programme.php

Beyond the scientific program, the AOC will host several important round table discussions and workshops in major themes such as bird trade and bird migration, bringing together some of the major players in these fields under one roof to develop strategies and take decisive cross-national action.

This will be the first AOC held in tropical Southeast Asia, with its unique avian diversity, allowing participants to explore the remaining natural hotspots of Singapore, including some of the last strongholds of globally endangered species such as Straw-headed Bulbul. Singapore also combines a rich cultural and culinary tapestry at the crossroads between East and South.

As convenor of the 3rd AOC, I warmly welcome you to Singapore. May we have an exciting and fruitful conference ahead!

Best wishes,



Frank E. Rheindt
AOC 2026 Conference Convenor
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AOC2026

Host Institution

National University of Singapore (NUS)

Conference Convener

Assoc. Prof. Frank E. Rheindt

Organizing Committee

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Local Organizing Chairperson: Dr Keren R. Sadanandan

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AOC 2026

General Information

Date: 14 - 17 November 2026

Programme venue: National University of Singapore University Town (NUS UTown)

Nested in the heart of tropical Southeast Asia, one of the most biodiversity-rich regions in the world, Singapore's strategic location offers the ideal setting to convene and engage in scientific discourse while exploring the amazing local birdlife.

Hosted at the National University of Singapore, the AOC 2026 brings together ornithological experts across the world to facilitate knowledge sharing and productive regional collaborations on Asian ornithology. This conference will feature a breadth of exciting plenary talks and presentations from across all disciplines of ornithology, with some of the focal topics being ecology, genomics and speciation, conservation management, the Asian songbird crisis and the illegal Asian bird trade, migration along the East Asian–Australasian Flyway, avian biogeography across Asia and much, much more.

During the conference: All participants are requested to turn off their mobile phones or set them to silent mode during the sessions. Please refrain from taking photos of the poster presentations unless prior permission is obtained from the poster presenter. Each presentation in the symposia sessions is allocated 15 minutes. We ask that speakers use 12 minutes for their presentation and reserve 3 minutes for Q&A. Time reminders will be given at the 10-minute and 12-minute marks. We kindly request symposium chairs and speakers to strictly adhere to the allotted time to avoid affecting the subsequent presentation.

In the event of an emergency, please contact the NUS Campus Emergency & Security (CES) hotline: +65 6874 1616

National University of Singapore

Welcome to the National University of Singapore (NUS), the proud host of this year's Asian Ornithological Conference. As one of the world's premier research institutions, NUS provides an inspiring backdrop for advancing avian science and conservation. Attendees have direct access to a vibrant scientific ecosystem, highlighted by the state-of-the-art facilities of the Lee Kong Chian Natural History Museum and its invaluable regional avian collections. The campus itself—integrated into Singapore's lush, tropical green corridors—serves as a living laboratory, offering immediate opportunities for urban birdwatching and field observations. By uniting researchers, conservationists, and educators from across the globe, NUS is honored to facilitate the vital exchange of ideas, methodologies, and discoveries contained within this booklet, fostering collaborative solutions for the future of Asia's diverse avifauna.

Conference Programme

Saturday, 14 November 2026	
14:00 - 18:00	Workshop: Shorebird Science for Conservation workshop LT50
15:00 - 18:00	Registration UTown Walkway
18:00 - 19:30	Welcome Dinner UTown Walkway

Sunday, 15 November 2026	
09:00 - 09:30	Opening ceremony UTown Auditorium 2
9:30 - 10:15	Plenary - Xingfeng Si Mobile Links in Fragmented Forests: High-Resolution Camera-Trapping Monitoring of Plant-Frugivore Interactions on Reservoir Islands UTown Auditorium 2
10:15 - 10:45	Coffee break UTown Walkway
10:45 - 11:30	Plenary - Ryan Chisholm The Asian Songbird Crisis: a View from Singapore UTown Auditorium 2
11:30 - 12:00	Youth Plenary - Umesh Srinivasan Tropical Montane Birds in a Hot and Degraded World UTown Auditorium 2
12:00 - 13:00	Poster Session UTown Walkway
13:00 - 14:00	Lunch break UTown Walkway

Sunday, 15 November

	LT50	LT51	LT52	LT53	Global Learning Room	Seminar Room 1-2
Symposium Sessions 14:00 - 15:30	Conserving Key Sites in the Central Asian Flyway: Ecology, Threats and Management of Stopover & Non-Breeding Sites	Avian Phylogenetics & Population Genetics	Birds in a Changing World: Responses to Climate Change & Anthropogenic Impacts	Threatened Species: Risks, Recovery & Reintroductions	Emerging Methods & Technologies in Avian Research	Avian Breeding Strategies: Patterns & Mechanisms
Chair(s)	Taej Mundkur; Ravindi Menikrama	Gang Song; Sijun Li	Wenjuan Wang; Mariia Vladimirtseva	Weiwei Zhang	Bekzhan Berdikulov	Jianqiang Li; Yitzchak Ben Mocha
14:00 - 14:15	**A104** **Sampath Seneviratne** Kitesurfing and Waterbirds: Implications for Managing Recreational Activities in Tropical Intertidal Habitats	**A263** **Yueyao Hu** Genomic vulnerability improves extinction-risk assessment and future prioritisation across 4,000 bird species	**A106** **Wenjuan Wang** The impacts of wetland degradation and extreme drought on geese at Poyang Lake, China	**A145** **Weiwei Zhang** Conservation Pressures and Adaptation Strategies for the Blue-crowned Laughingthrush in Human Settlements	**A107** **Diana Solovyeva** Challenges resulting from the ecological traits of the endangered East Asian endemic Scaly-sided Merganser	**A143** **Yitzchak Ben Mocha** The Cooperative-Breeding Database (Co-BreeD) and insights on the effect of alloparental care, latitude and elevation on clutch size
14:15 - 14:30	**A105** **Ravindi Menikrama** First Insights into Movement and Connectivity of Resident Waterbirds Within the Island of Sri Lanka.	**A308** **Diksha Dange** Wings of Time: Chromosome-level Genomics and Temporal Population Analyses Illuminate the Genetic Legacy of the White-rumped Vulture (*Gyps bengalensis*)	**A128** **Evgeny Shemyakin** Flexible habitat use by eastern-lesser white-fronted geese during the post-breeding period driven by river hydrology	**A278** **Shangyu Wang** Genetic Vulnerability and Habitat Loss Threaten the Long-Term Persistence of the Endangered Jankowski's Bunting (*Emberiza jankowskii*)	**A205** **Manfang He** Detection Bias in Monitoring Birds by infrared-camera trapping in Chinese Forests: An Integrated Analysis of Functional Traits and Phylogeny	**A175** **Onolragchaa Ganbold** Nest-Site Selection and breeding behavior of Lesser kestrel in semi-desert region of Mongolia
14:30 - 14:45	**A280** **Tsoggerel Baldandugar** Migration Patterns and Conservation of two Bustard species in the Uvs Lake Basin, Western Mongolia	**A319** **Zhenyue Wang** Resolving the paradox of invasion biology: A case study of Silver-eared Mesia (*Leiothrix argentauris*)	**A130** **Yurii Monastyrev** Climate-driven northward range shift and new migratory pathway of the Asian Dowitcher in Eastern Siberia	**A418** **Rina Kuwabara** Breeding-site selection in the reintroduced Oriental Stork population is more strongly influenced by natal philopatry than by NHPI	**A202** **Damien Farine** Bluetooth low-energy beacons: a novel tool for studying urban and migratory movements	**A243** **Shaobin Li** Altitudinal Variation in the Breeding Strategy of the Brown Accentor (*Prunella fulvescens*) on the Qinghai-Tibet Plateau

Sunday, 15 November

14:45 - 15:00	**A400** **Ramesh Kumar Selvaraj** Strengthening Flyway Conservation through Collaborative Networks and Citizen Science in the Central Asian Flyway	**A358** **Gabriel Low** Population genomics underlying successful conservation of the Straw-headed Bulbul in its last global stronghold	**A149** **Mariia Vladimirtseva** Effect of climatic factors on Siberian crane breeding success, Eastern population	**A427** **Bertie Ferns** Conservation Breeding Successes and Challenges in Asian Songbirds: Case Studies of the Javan Green Magpie and Rufous-fronted Laughingthrush	**A214** **Julia Loshchagina** Using remote sensing methods for estimation nesting density of Barnacle geese	**A287** **Mun Heeju** A Trade-Off in Parental Investment Between First and Second Breeding Attempts in the Oriental Magpie (*Pica serica*)
15:00 - 15:15	**A491** **Taej Mundkur** Conserving the ecological connectivity of the Bar-headed Goose, an iconic Central Asian Flyway specialist	**A392** **Sahar Javaheri Tehrani** An introgressed haplotype decouples phenotype from genome-wide ancestry	**A345** **Yuxuan Ouyang** Niche differentiation drives contrasting climatic responses of two sympatric pheasants	**A470** **Jochen Menner** Back from the brink, the recovery efforts for Maratua Shama at TSI-PCBA	**A224** **Lichun Gao** Research on Wintering Population Survey Methods of Whooper Swans Based on UAV and YOLOv5	**A238** **Yuhan Zhang** Mitigating effects of nest structure on predation risk in Hainan Partridge (Arborophila ardens)
15:15 - 15:30			**A241** **Dandan Ma** Coping with urbanization: immune adaptation and gut microbiota-derived metabolic regulation in Eurasian tree sparrows (Online talk)		**A288** **Yiwei Cao** A probabilistic framework for quantifying species' elevational distribution and assessing elevational migration intensity	**A426** **Mari Esashi** Cooperative breeding in an insular population of the Japanese Scops Owl: insights from genome-wide SNP-based kinship analysis
15:30 - 16:00	Coffee break UTown Walkway					

Sunday, 15 November

Symposium Sessions 16:00 - 17:30	**LT50**	**LT51**	**LT52**	**LT53**	**Global Learning Room**	**Seminar Room 1-2**
	Conservation of Migratory Landbirds in Asia	Avian Diversity & Distribution	Ornithology in the City	Bird Trade, Poaching & the Asian Songbird Crisis	Tracking Migratory Birds: Telemetry, Routes & Key Habitats	Avian Morphology, Physiology & Phenotypic Evolution
Chair(s)	Simba Chan; Munehiro Kitazawa	Fei Wu; Yuehua Sun	Malcolm Soh; Xueyan Li	Jessica Lee; Dan Liang	Yu Liu; Baasansuren Erdenechimeg	Yalin Cheng; Hongfei Zou
16:00 - 16:15	**A163** **Haruka Mizumura** Population trend of the Brown Shrike *Lanius cristatus superciliosus* on Mt. Fuji: The process of population collapse and conservation challenges	**A248** **Xu Luo** Bird Research in the Gaoligong Mountains: Past, Present and Future	**A222** **Xueyan Li** Can urban greening buffer the impacts of climate warming on bird diversity? Evidence for biogeographic limits from Chinese cities	**A315** **Minhao Chen** Understanding the Use of Hunting Tools to Conserve Migratory Birds	**A101** **Yu Liu** Advances in tracking migratory birds in Asia	**A116** **Andrei Zinoviev** Ecomorphological approaches to reconstructing the biology of extinct birds
16:15 - 16:30	**A181** **Munehiro Kitazawa** Habitat preferences of Brown Shrikes across breeding and wintering grounds: endangered in Japan, common in Thailand	**A271** **Yuhao Zhao** Revisit Island biogeography theory: bird colonization and extinction probability link to the ecological similarity between resident community on land-bridge islands	**A261** **Malcolm C. K. Soh** Cities as Refuges for Tropical Peregrines: Lessons from Singapore's First Breeding Pair	**A371** **Serene Chng** Enforcement actions relating to the illegal and unsustainable songbird trade in Southeast Asia	**A127** **Baasansuren Erdenechimeg** Migration and breeding surveys of endangered cranes in North-eastern Mongolia	**A151** **Shao-Ming Chang** The Role of ALX1 in Driving the Morphology of the Avian Beak
16:30 - 16:45	**A310** **Pattraporn Simla** Estimating the abundance and habitat use of the critically endangered Yellow-breasted Bunting (*Emberiza aureola*) on its wintering grounds	**A333** **Chenchen Ding** Disentangling climate signals from survey effort in new bird distribution records across China	**A432** **Yuhao Chen** From passive acoustic data to citywide monitoring design: AI-Powered Spatial Prediction of Urban Bird Acoustic Activity	**A403** **Jia Hao Tow** Evaluating temporal price drivers in Indonesia's live bird trade using citizen science and market data.	**A334** **Guozheng Li** Satellite Telemetry Solutions for Monitoring Diverse Asian Bird Species	**A267** **Mengzhu Wang** Airborne microplastics organize spatial injury domains and SPP1-centered cell states in the avian lung

Sunday, 15 November

16:45 - 17:00	**A327** **Xiaotong Ren** Assessing Urban Green Space Stopover Habitat for Migratory Landbirds in Shanghai	**A353** **Yuan Lu** Elevational Patterns of Bird Diversity in the Himalayas	**A461** **Raghav Narayanswamy** Generalised linear mixed models based on dense citizen science data reveal avifaunal trends in a tropical city	**A446** **Jessica Lee** Lessons from a Regional Conservation Network: Addressing Asia's Songbird Trade Crisis Through Collaboration	**A344** **Kunpeng Yi** Multi-scale Movement Patterns of Migratory Birds and Conservation of Key Lake Habitats in East Asia	**A081** **Chang Zhang** Avian GCGR: a Novel Perspective for Obesity Treatment and as a Natural Doping-omega-3 Receptor Enhancing Endurance during Bird Migration
17:00 - 17:15	**A297** **Anna Moulin** Promoting a Bird Ringing Network in Asia: A Framework for the Creation of an East Asian Landbird Ringing Working Group.	**A411** **Thongthornpatch Chamadol** Quantifying Changes in Environmental Preference of Narcissus Flycatcher (*Ficedula narcissina*) Across Phenological Stages using Dynamic Species Distribution Models	**A469** **Natasha Koh** Tracing the movement networks of invasive House Crows in Singapore	**A459** **Hariyawan Agung Wahyudi** Bird poaching threatens a montane refugium on Java, Indonesia	**A377** **Zhongru Gu** Rapid behavioural adjustment facilitates the formation of a novel migration route in swan geese	**A303** **Lirong Zuo** Early Embryonic Thermal Fluctuations Shape Avian Phenotypic Plasticity: Multi-omics Insights from Intermittent Cold Stimulation in Domestic Chickens (Online talk)
17:15 - 17:30	**A409** **Simba Chan** From the International Yellow-breasted Bunting Conservation Action Plan to a Conservation Strategy of Migratory Landbirds in Asia	**A368** **Fei Wu** Spatial Isolation, Interspecific Interactions and Habitat Filtering Jointly Shape Spatial Patterns of Avian Diversity in the Three Parallel Rivers Region	**A482** **Yong Xu Leong** Changes in nesting preferences of the invasive house crow (*Corvus splendens*) after two decades in Singapore's evolving urban landscape	**A373** **Chris Shepherd** Making CITES work for songbirds		**A423** **Wang Hui** An ancient HMGA2-linked haplotype region contributes to phenotypic divergence during speciation with gene flow in penduline tits
17:30 - 19:30	**LT50** Roundtable Conservation on Migratory Landbirds in Asia, Including Establishment of Platform and Compilation of a Strategy Roundtable			**LT53** Roundtable Asian Songbird Trade Conservation Interventions Roundtable	**Global Learning Room** Meeting Asian Ornithological Alliance	

Monday, 16 November 2026						
9:30 - 10:15	Plenary - Sarath Kotagama Mixed Species Feeding Flocks - Mystery Still Remains UTown Auditorium 2					
10:15 - 10:45	Coffee break UTown Walkway					
10:45 - 11:30	Plenary - Susanne Åkesson Life in the Air Space - Non-Breeding Movements in Aerial Insectivorous Birds UTown Auditorium 2					
11:30 - 12:00	Youth Plenary - Ying Xiong From Macroevolutionary Trade-offs to Neurogenomic Mechanisms in Avian Cognitive Evolution UTown Auditorium 2					
Symposium Sessions 12:00 - 13:00	**LT50**	**LT51**	**LT52**	**LT53**	**Global Learning Room**	**Seminar Room 1-2**
	Asian Migratory Bird Case Studies: Routes, Cycles and Stopover Sites	Evolutionary Diversification	Breeding Ecology & Nest Success	Successful Recoveries & Positive Actions	Messages from Common Birds: aren't we missing them?	Avian Health, Parasites & Environmental Stress
Chair(s)	Pavel Ktitorov; Fawen Qian	Cynthia Saloma; Yuqing Han	Anton Ivanov; Qiang Zhang	Chowdhury Sayam; Kai Song	Sang-Im Lee; Diana Kuchinke	Bushra Khan; Na Zhao
12:00 - 12:15	**A190** **Pavel Ktitorov** Unexpected migration routes of East Asian populations of Rough-Legged Hawk (*Buteo lagopus*)	**A203** **Hongrui Lv** Shared Historical Refugia and Genetic Diversity Hotspots of Co-distributed Species on the Qinghai-Tibet Plateau	**A148** **Anton Ivanov** Results of color marking of the Spoon-billed Sandpiper in southeastern Chukotka, Russia	**A067** **Htet Aung Khant** Bird Species Diversity at Long Term Forest Restoration Plots in Northern Thailand	**A114** **Shakinah Ravindran** Impact of Researcher Presence towards Eastern Barn Owls (*Tyto javanica javanica*) Breeding in Artificial Nest-Boxes	**A154** **Alexander Shestopalov** Studies on viral metagenomics in Siberian birds
12:15 - 12:30	**A252** **Mikhail Markovets** Annual Cycle of the Swinhoe's Snipes	**A246** **Mark Menezes** Bioacoustics, genomics and morphometric analysis of the *Otus sunia* species complex - exploring the potential for cryptic speciation	**A258** **Altangerel Tsogtmagnai** Influence of ambient temperature on biparental incubation patterns in the Saker Falcon	**A225** **Yumeng Zhao** Population Recovery of green peafowl (*Pavo muticus*) in China and Its 2025 National Monitoring	**A118** **Diana Kuchinke** Common bird responses to the severity of managed burns in the dry forests of Victoria, Australia	**A212** **Petr Glazov** Mercury pollution in birds migrating between China and Russia

Monday, 16 November

12:30 - 12:45	**A395** **Rueyshing Lin** A non-monotonic recovery against the European decline: 14 years of citizen-science monitoring of wintering Northern Lapwing (*Vanellus vanellus*) in Taiwan	**A374** **Yuqing Han** Three-dimensional forest architecture drives the vertical evolution of avian coloration	**A290** **Zhiqiang Zhang** Analysis on Food Diversity for Nestlings of Red-billed Leiothrix *Leiothrix lutea* Based on Miniature Cameras and DNA Metabarcoding Technology	**A291** **Yong Ding Li** Flyway conservation in Asia – connecting flyway science to action on the ground	**A270** **Farhat Batool** House Sparrow Reveal Patterns of Urban Environmental Quality across various sites in Faisalabad Pakistan	**A313** **Sejeong Han** Ecological Correlates of Tick Prevalence in Migratory Passerines at a Stopover Site in South Korea
12:45 - 13:00	**A484** **Boye Liu** Preliminary Study on Breeding and Migration of the Blackthroat (*Calliope obscura*)	**A384** **Cynthia Saloma** Uncovering Genetic Diversity, Inbreeding, and Demographic History of the Critically Endangered Philippine Eagle (*Pithecophaga jefferyi*) through Conservation Genomics	**A424** **Sungkono Sungkono** Community-based nest monitoring reveals breeding success of the Endangered Javan Blue Flycatcher (Cyornis banyumas)	**A481** **Benjamin Lee** Avifauna as bioindicators of desert restoration success: a first-year monitoring assessment from Sharaan National Park, Saudi Arabia	**A300** **Sang-im Lee** What can we learn from common birds: insights from the Oriental Magpie *Pica serica*	**A493** **Na Zhao** Gut bacterial community profiles of high-altitude birds
13:00 - 14:00	Lunch break UTown Walkway					

Monday, 16 November

Symposium Sessions 14:00 - 15:30	LT50	LT51	LT52	LT53	Global Learning Room	Seminar Room 1-2
	Migratory Corridors & Connectivity in the Central Asian Flyway: Insights from Tracking Technologies	Comparative Genomics & Macro-Evolution	Urban Ecology	Habitat Change, Conservation Management & Bird Responses	Avian Bioacoustics	Avian Behaviour: Reproduction, Learning & Decision-Making
Chair	Sampath Seneviratne; Delip K Das	Meng-Ching Ko; Yanzhu Ji	Farhat Batool; Dongming Li	Benjamin Lee; Jinggang Zhang	Dinesh Bhatt; Kris Dian Yjares	Theresa Rössler; Jin-Won Lee
14:00 - 14:15	**A320** **Delip Das** Black-tailed Godwits connecting migration dots in Asian flyways	**A103** **Na Kang** Ecological adaptation and genetic basis of tarsus length diversity in birds	**A153** **Di Zeng** Urban plants shape plant–bird frugivory interaction networks in urban green spaces	**A115** **Hasber Salim** Eastern Barn Owls (*Tyto javanica javanica*) and Sustainable Pest Management of Rat Pests in Agricultural Lands in Malaysia	**A159** **Jiaying Yang** Solos vs duets: how do different female singing behaviors influence the evolution of male song features in songbirds?	**A113** **Tomohiro Deguchi** Mate choice cues in long-lived monogamous Oriental Storks
14:15 - 14:30	**A412** **Arjun Kannan** Tracking Montagu's and Pallid Harriers in the Central Asian Flyway	**A314** **Yanzhu Ji** Flight and metabolism shape the tempo of genome evolution in birds	**A220** **Dongming Li** Multidimensional Strategies of Urban Adaptation in Birds: Metabolism, Brain Plasticity, and Communication Trade-offs	**A332** **Lei Lv** Conservation efforts and climate warming increase waterbird abundance along the coasts of the China	**A294** **Dinesh Bhatt** Acoustic Communication Studies on Birds in India	**A158** **Danila Mitiakov** The foraging behaviour of Great knots: age matters!
14:30 - 14:45	**A460** **Anisimov Yury** Migration routes of Common Cuckoos (*Cuculus canorus*) of Baikal Rift Zone.	**A429** **Taylor Hains** Genome Assemblies Reveal Long-Term Chromosomal Stability in Wallacean and Australasian Cockatoos	**A309** **Sung-Guk Park** Effects of Extreme Temperatures and Urbanization on Laying Dates in an Urban Bird, the Oriental Magpie (*Pica serica*)	**A399** **Jingxi Yao** Habitat Spatiotemporal Dynamics and Conservation Gap Analysis of Pterorhinus courtoisi	**A339** **Ana Gabrielle Alcantara** Mangrove Minstrels: Passive Acoustic Monitoring (PAM) in the Las Piñas–Parañaque Wetland Park (LPPWP), Philippines	**A185** **Chenyang Zhao** Nestling birds learn socially to eavesdrop on heterospecific alarm calls through acoustic association

Monday, 16 November

14:45 - 15:00	**A467** **Sampath Seneviratne** New perspectives on waterbird migratory corridors in the Central Asian Flyway, with a focus on the role of the Himalayas and the Tibetan Plateau in shaping connectivity	**A440** **Toni Gossmann** Why sex-based genomic differentiation should not be overlooked in population genomics	**A354** **Bushra Nisar Khan** Universities as Urban Biodiversity Refugia: A Comparative Assessment of Avian Diversity Across Five Campuses in Pakistan	**A451** **Ayu Wijayanti** Participatory Land-Use Management Planning as a Tool for Biodiversity Conservation: An Ongoing Process in Mbeliling Landscape, Flores, Indonesia	**A340** **Kris Dian Yjares** Developing Automated Bird Call Classifiers for Philippine Species	**A213** **Ma Ruiyao** Proactive vs. reactive multi-brooding: divergent drivers of double brooding and replacement clutching in varied tits
15:00 - 15:15		**A457** **Yibo Zhou** Sexual selection shaped phenotypic evolution near the origin of birds	**A455** **Jo-Szu Tsai** Beyond the forest: island-wide monitoring and urban breeding reveal ecological flexibility in the Malayan Night-Heron	**A452** **Jinggang Zhang** Seasonal shifts in the fitness consequences of human disturbance in a wild passerine	**A435** **Albert Feliciano Ferrari** Spatial Distribution, Daily Vocal Activity, and Vocal Repertoire of the Critically Endangered Javan Green Magpie in Mount Sawal Wildlife Reserve	**A367** **Xiangjiang Zhan** Neurogenomic basis of female visual mate choice revealed by a customized awake fMRI in zebra finches
15:15 - 15:30		**A502** **Meng-Ching Ko** Deciphering convergent and lineage-specific genomic changes in sugar-consuming birds		**A465** **Chi Yeung Choi** Larger wetlands around airports in East Asia could reduce runway crossing of migratory waterbirds		**A394** **Theresa Rössler** Flexible tool use in introduced Tanimbar corellas
15:30 - 16:00	Coffee break UTown Walkway					

Monday, 16 November

	LT50	LT51	LT52	LT53	Global Learning Room	Seminar Room 1-2
Symposium Sessions 16:00 - 17:30	Migratory Bird Conservation: Threats, Monitoring & Flyway Action	Phylogeography, Systematics & Speciation	Urban Avian Ecology & Conservation: Navigating a Human-Dominated World	Bird Long-term Research & Conservation	Ornithology in Practice: Outreach, Collections & Conservation Capacity	Social Behaviour, Mixed-Species Flocks & Anti-Predator Responses
Chair(s)	Ginny Chan Ying-Chi; Vivian Fu	De Chen; Pratibha Baveja	Binbin Li; David Tan	Daiping Wang; Damien Farine	John van Wyhe; Rajgopal Patil	Eben Goodale; Nan Lyu
16:00 - 16:15	**A150** **Hengjun Xiao** Community-level reorganization of a migratory flyway: ecological position, not species identity, predicts directional decline in East Asian–Australasian shorebirds	**A121** **Pooja Pawar** Phylogeography of Great Hornbill *Buceros bicornis*	**A129** **He Shuiqing** Scale-dependent scale on bird collision: Insights from China's Largest Citizen Science Initiative	**A506** **Daiping Wang** The long-term study system of an endangered species (Crested ibis) in China	**A079** **Maria Ramone** Tumonong Pellets and Online Citizen Science Uncover the Generalist Diet and Year-Round Breeding of the Philippine Scops Owl (*Otus megalotis*)	**A156** **Shilong Liu** Do high levels of heavy metals affect the vigilance of an avian community informant?
16:15 - 16:30	**A264** **Zhang Min** Residence-type based correction of ecological risk from offshore wind farms for birds along the Guangdong coast, China	**A137** **Yichen Guo** Genomic Evidence of Introgression and Hybrid Speciation in an Island Radiation of *Zosterops* White-eyes.	**A160** **David Tan** Why are some birds more window collision-prone than others?	**A200** **Qiang Zhang** Decadal Trends in China's Breeding Birds: Stable Species Richness but Increasing Homogenization	**A112** **John van Wyhe** A. R. Wallace's Complete Collection of Birds from the Malay Archipelago	**A193** **Eben Goodale** Species diversity increases information flow about predation in bird communities
16:30 - 16:45	**A299** **Vivian Fu** Conserving Asia's Riverine Avifauna: Bridging Flyway-Scale Gaps	**A240** **Pratibha Baveja** Supertramps defy the classical model of allopatric speciation in small-island environments	**A164** **Jia-Kai Wang** Raptors that have collided with windows: Analyzing raptor window collisions factors in subtropical Asia by citizen science and wildlife rehabilitation data	**A231** **Yurui Guo** Disentangling seasonality and environmental drivers: water level and riparian afforestation shape long-term trends of waterbirds in the largest reservoir in North China	**A141** **Dwi Agustina** Understanding Local Communication Patterns to Raise Awareness about Parrots Conservation in Maluku	**A223** **Nan Lyu** Animal personality influences the speed-accuracy tradeoff in decision making in Budgerigars (*Melopsittacus undulatus*)

Monday, 16 November

16:45 - 17:00	**A304** **Ying Chi Chan** Bird tracking in the East Asian-Australasian Flyway: current status and future directions	**A260** **Freesia Shaoyi Shee** Genomic and bioacoustic evidence reveal Camiguin's *catarmanensis* to be a Warbling White-eye *Zosterops japonicus*, not a Yellowish White-eye *Z. nigrorum*	**A226** **Chi-Heng Hsieh** Distinct Bird–Window Collision Patterns in Taiwan: Insights from a Decade of Citizen Science and Social Media Records	**A245** **Odmaa Bulgan** Long-term Trends of Shorebird Populations in Chukh Lake, eastern Mongolia	**A165** **Yen Yi Tan** Dead Birds, Living Data: From Casualty to Biodiversity Resource	**A391** **Nora Carlson** Who to help? Decision making during mobbing
17:00 - 17:15	**A317** **Dan Liang** Seasonal mortality of migratory shorebirds caused by aquaculture deterrence nets and socioeconomic drivers of their use along the East Asian–Australasian Flyway	**A364** **Collin Liang Wei Chua** Phylogeography of the Silver-eared Mesia (*Leiothrix argentauris*) complex	**A281** **Yuexin Song** New Pathways for Urban Bird Conservation: Citizen Science Facilitating the Implementation of OECMs - Taking Schools and Parks in Shanghai as Examples	**A489** **Bekzhan Berdikulov** Integrating bird ringing, tracking and community-based monitoring in Kazakhstan: research, conservation and networking along the Central Asian Flyway	**A343** **Nicole Tay** Frozen Flight: Biobanking for Avian Conservation	**A443** **Iresha Wijerathne** Squirrels co-occurrence within mixed-species bird flocks (MSFs) in lowland rainforests of Sri Lanka.
17:15 - 17:30	**A431** **Choon Min See** Securing the Conservation of the North-Central Selangor Coast Through Long-Term Waterbird Monitoring	**A456** **Ivan Starikov** The Little Owl *Athene noctua*: How many species are hidden in one?	**A478** **Peeyush Sekhsaria** Bird window collision in India - What do we know and where do we go from here	**A133** **Yuri Gerasimov** Trends in the number of passerine birds in Kamchatka, Russian Far East, over the past 50 years	**A439** **Rajgopal Patil** Eggs on Envelopes: Using postage stamps to teach diversity, evolution and conservation of bird eggs	**A454** **Agnishikhe Munipapa Reddy Ashok Kumar** What drives mobbing behaviour in birds? A meta-analysis
18:00 - 22:00	Conference Dinner Forest Lodge, Singapore Zoo					

Tuesday, 17 November 2026						
Symposium Sessions 9:30 - 11:00	**LT50**	**LT51**	**LT52**	**LT53**	**Global Learning Room**	**Seminar Room 1-2**
	Migration Timing, Routes & Movement Strategies	Avian Population Genomics, Demography & Diversification	Anthropogenic Impacts on Birds & Their Habitats	Threatened Birds: Distribution, Habitat & Ecology	Bird Tracking: From Individuals to Populations	Avian Pathogens, Disease Ecology & Host–Virus Evolution
Chair(s)	Nikita Chernetsov; Jin Liu	Sua Yun Shan; Heiman Ho	Yongjie Wu; Kalindu Habarakadaarachchi	George A. Gale; Waruni Tissera	Dikpal Krishna Karmacharya; Krishna Prasad Bhusal	Alexander Shestopalov; Xi Huang
9:30 - 9:45	**A063** **Nikita Chernetsov** Relative abundance of songbird migrants in autumn in the arid belt of Central Eurasia	**A139** **Yun Shan Sua** Genomic signatures of mitonuclear coevolution in *Poephila* finches	**A166** **Hem Bahadur Katuwal** Human pressures homogenise bird diversity across multiple dimensions in a South Asian landscape	**A132** **George Gale** Distribution and population status of the globally endangered Giant Nuthatch *Sitta mangna* in Myanmar	**A084** **Dikpal Krishna Karmacharya** Satellite tracking reveals movement patterns of Sarus crane in Nepal	**A102** **Wenjing Wei** Comparative Transcriptomics Reveals Bird–Virus Co-evolution
9:45 - 10:00	**A247** **Wu Yang** Flying together, flying high: synchronous non-stop transoceanic migration in Grey-tailed Tattlers	**A215** **Gang Song** Population genomics of the two widely distributed passerines across the Qinghai-Tibet Plateau	**A186** **Yexi Zhao** Global Patterns and Drivers of Artificial Habitat Use in Birds	**A144** **Elena Lappo** Changes in distribution and abundance of the Spoon-billed Sandpiper in Russia	**A125** **Prachi Mehta** Spatio-Temporal Niche Partitioning and Home Range Dynamics of Sympatric Owl Species in Melghat Tiger Reserve, India	**A131** **Xi Huang** Temporal dynamic of host-range expansion in wild bird communities
10:00 - 10:15	**A285** **Linna Xiao** Seasonal reversal of crosswind response during high-altitude migration in Bar-headed Geese	**A228** **Francesca Failla** Genomic discordance and diversification in the White-rumped Shama (*Copsychus malabaricus*) complex	**A188** **Peter Jan de Vera** Global analyses of nest predation in shorebirds: comparative tests of anthropogenic effects	**A236** **Yun-dong Zhong** Spatial match and mismatch: Hydrological regulation decouples habitat suitability from abundance distribution in threatened Hooded Crane (Grus monacha)	**A210** **Hemanta Dhakal** Using Mobile Applications for Vulture Monitoring: first data obtained with Wing Watcher in Nepal (2024-2025)	**A167** **Marina Gulyaeva** The role of wild birds in long-distance migrations of viruses

Tuesday, 17 November

10:15 - 10:30	**A324** **Yi-Chien Lai** Tracking Black-faced Spoonbill migratory corridors in East Asia's expanding offshore wind seascape	**A378** **Heiman Ho** Demographic history of the edible-nest swiftlet (*Aerodramus fuciphagus*): a species under heavy exploitation	**A268** **Yongjie Wu** Avian lungs reveal regional fingerprints and body-size filtering of airborne microplastic burdens	**A405** **Waruni Tissera** Habitat Requirements and Occupancy Pattern of the Endangered Serendib Scops Owl (*Otus thilohoffmanni*) in Sri Lanka	**A244** **Mayjean Marie Nieves** Telemetry offers novel insights on home range and population size of threatened songbirds in Singapore	**A273** **Shi Ke** Community Behavioral Heterogeneity Shapes Disease Transmission Through the Spatial Diffusion-Dilution Trade-Off of Landscape Connectivity
10:30 - 10:45	**A363** **Jin Liu** Avian migration timing advances linked to season-dependent population benefits	**A501** **Thierry B. Hoareau** Genome wide data recover hierarchical genetic structure and help define conservation units for the threatened Asian Houbara	**A275** **Lei Xu** Traffic Noise Alone Reduces the Functional Value of Low-Tide Foraging Flats for Shorebirds	**A495** **Mu-Ming Lin** Influence of Biological and Habitat Traits on Day-Roost Dynamics of the Australasian Grass-Owl (*Tyto longimembris pithecops*) in Taiwan	**A369** **Krishna Prasad Bhusal** Globally Endangered Egyptian Vultures Strongly Depend on Human-Mediated Food Resources in Asia: Evidence from GPS Tracking	**A466** **Lasith Kirindiwatte** The Phylogeographic Structure of Avian Haemosporidians in *Zosterops* White-eyes of the Island of Sri Lanka.
10:45 - 11:00			**A473** **Kalindu Habarakadaarachchi** Microplastic Contamination across Urban-rural gradient in Terrestrial Birds			
11:00 - 11:30	Coffee break UTown Walkway					

Tuesday, 17 November

	LT50	LT51	LT52	LT53	Global Learning Room	Seminar Room 1-2
Symposium Sessions 11:30 - 13:00	Flyway Conservation in Asia – Connecting Flyway Science to Action on the Ground	Island Biogeography, Genomics & Evolution	Birds Under Global Environmental Change	Citizen Science for Avian Monitoring & Conservation	The Role of Bird Banding Stations in Asia during the New Era of Ornithology & Conservation	Foraging, Space Use & Behavioural Ecology
Chair(s)	Ding Li Yong; Zhijun Ma	Dezhi Zhang; V.V. Robin	Fei Xu; Fasheng Zou	Praveen J; Vince Angelo Gicaraya	Tianhao Zhao; Wenyi Zhou	Jelaine Gan; Lei Lv
11:30 - 11:45	**A389** **Rongrong Angkaew** Netting of wild birds across Asia: What do we know and where do we go next?	**A142** **Shashank Dalvi** Island colonisation and speciation in the *Otus sunia* complex across the Andaman and Nicobar Islands	**A182** **Juan Liu** Climate warming drives divergent functional reorganization: homogenization between similar-sized patches but differentiation between patches of contrasting sizes	**A090** **Vince Angelo Gicaraya** Engineered for the city: anthropogenic nest materials and nesting innovations among urban birds in the Philippines through citizen science	**A282** **Tianhao Zhao** Beyond re-capture: combining the application of the Genoscape approach with orientation experiments at Baikal and Khovd Ringing Station	**A109** **Xiaoying Xing** Eating more and fighting less: social foraging is a potential advantage for successful invasion of Light-vented Bulbul
11:45 - 12:00	**A323** **Batmunkh Davaasuren** Tracking shorebird migration from Mongolian inland wetlands	**A490** **Chen Xi Sng** Bioacoustic Evidence Reveals a Cryptic Taxon in the Rufous-tailed Shama *Copsychus pyrropygus*	**A239** **Binbin Li** Comparing potential biodiversity conflicts from renewable energy expansion in China at different centralization levels	**A170** **Praveen J** Methods for Assessing IUCN Red List Status Using Large-Scale Citizen Science Data: Lessons from the State of India's Birds Initiative	**A438** **Dillen Ng** Towards a Localised Bird Ringing Programme for Singapore: Building Capacity in a Tropical Urban Context	**A138** **Jelaine Gan** Predicting bird-mediated seed dispersal in a fragmented forest landscape
12:00 - 12:15	**A257** **Vatcharavee Sriprasertsil** The salt production process and variables affecting high-tide use of shorebirds in a key salt producing area of Thailand	**A265** **Movin N** Genomic data demonstrates deep divergences in bird species across the mountain ranges of the Philippine archipelago	**A401** **Yuchun Ni** Projected global sea-level rise impacts on bird habitats	**A355** **Lin He** Bird-Pond Ecotourism: A Win-Win Strategy for Forest Biodiversity and Rural Development	**A274** **Wenyi Zhou** Bird banding as an opportunity to study avian distress calls	**A155** **Jiangping Yu** Geographic variation in sleep behavior of Asian Tits (*Parus cinereus*) across China

Tuesday, 17 November

12:15 - 12:30	**A366** **Aung Thiri Da Wei** Conservation of migratory shorebirds and marine ecosystems in the Gulf of Mottama, Myanmar	**A329** **V.V. Robin** Biphasic habitats, landscape change, and species demography: insights from the Shola Sky Islands	**A408** **Yingtong Zhu** Bird Habitat Loss from Oil Palm Expansion: Global Patterns and Indonesian Supply Chains	**A421** **Panji Gusti Akbar** A Collaborative, Transboundary Evaluation of BirdNET for Migratory Bird Monitoring Across the East Asian–Australasian Flyway	**A450** **Park Seyoung** From Capture to Departure: Automated Radio Telemetry at Korean Stopover Sites and Prospects for Flyway-Scale Monitoring	**A360** **Zhengxiao Liu** Behavioral phenotypes predict mortality risk in an endangered pheasant population
12:30 - 12:45	**A209** **Sayam U. Chowdhury** Interspecific variation in shorebird population trends in relation to migration stopover habitat	**A497** **Juan Carlos Gonzalez** Draft Genome for the Vulnerable Philippine Eagle-owl (*Ketupa philippensis*) Supports its Placement in Genus *Ketupa*	**A410** **Fei Xu** Extreme drought-driven phenological mismatches amplify reliance on farmland in overwintering waterfowl	**A494** **Luo Kang** Grassroots bird-photography livelihoods connect rural development and biodiversity conservation	**A458** **Valentina Anisimova** Tracking landbird migration in Asia through collaborative work at the Baikal Bird Ringing Station	**A471** **Induja Udara** Ecological Characterization of Camouflage and Mimicry in the Sri Lanka's Ghost Bird (*Batrachostomus moniliger*)
12:45 - 13:00	**A284** **Elize Ng** A flyway at risk: evaluating shorebird conservation interventions along the East Asian–Australasian Flyway				**A462** **Tuvshinjargal Erdenechimeg** From Ringing to Resilience: A Ten-Year Case Study from Khurkh Bird Ringing Station, Eastern Mongolia	
13:00 - 14:00	Lunch break UTown Walkway					
14:00 - 14:45	Plenary - Toshitaka Suzuki Animal Linguistics: Meaning, Syntax, and Gesture in Avian Communication UTown Auditorium 2					
14:45 - 15:00	Voting for Best Talk/Poster UTown Auditorium 2					
15:00 - 16:00	Awards & Closing Ceremony UTown Auditorium 2					

Plenary Speaker



Ryan Chisholm
Professor
Department of Biological Sciences, National University of Singapore

The Asian Songbird Crisis: a View from Singapore

Keywords: Conservation, Extinction, Asian Songbird Trade, Poaching, Modelling

It is a time of peril for Asian birds. Many species have declined drastically in recent decades, primarily because of habitat destruction and hunting. I will give a perspective on Asian avian ornithology and conservation through the lens of Singapore. Over the last two centuries, an estimated 41% of bird species in Singapore have been extirpated. Despite this, a few species are doing surprisingly well, most notably the globally critically endangered Straw-headed Bulbul (*Pycnonotus zeylanicus*). Recent research on this species in Singapore suggests the population size may be close to 1,000 individuals. I will discuss the implications of the Straw-headed Bulbul's success in Singapore for conservation of it and other species elsewhere in the region. The clear take-home message is that some endangered bird species can thrive, even in highly disturbed habitats, if hunting is minimal. I will speculate about how the economic incentive for bird hunting might be reconciled with the desire for bird conservation across the region.

Ryan Chisholm completed a BSc in Mathematics and Statistics (with Honours in Botany) and a BA in German at the University of Melbourne, and then did his MA and PhD in Ecology and Evolutionary Biology at Princeton University. He had a two-year postdoctoral appointment at the Smithsonian Tropical Research Institute in Panama and then moved to the National University of Singapore as an Assistant Professor in 2012, and was promoted to Associate Professor in 2019. He is interested in tropical forest ecology, biodiversity, ecosystem function, and extinctions. He published a number of papers exploring the mechanisms that maintain diversity in ecological communities using a combination of theory, observation and experiment. A highlight was a paper with Lynette Loke in Nature in 2023, for which he won the Ecological Society of America's George Mercer Award. He also have a substantial body of work focused on estimating historical extinction rates in Singapore over the last 200 years. This culminated in a paper in PNAS in 2023 looking at extinction rates among ten taxonomic groups.

Plenary Speaker



Sarath W. Kotagama
Professor Emeritus
Department of Zoology and Environment Sciences,
University of Colombo

Mixed Species Feeding Flocks - Mystery Still Remains

In 1970 the government keeping with global trends decided to invest on the production of “Ply Wood”. This resulted in the commissioning of the largest Ply board production factory in Sri Lanka. The timber for this venture came from the Wet Zone forests – particularly from the last unfelled forest area – Sinharaja Forest Reserve. The conservation community was perturbed, they rose to canvas against the logging. The government responded – firstly by appointing a very competent “scientific committee” to review the criticisms and the proposal. Three thousand hectares were declared in the adjoining areas as “Man and Biosphere Reserve”. The logging commenced in 1972, and continued till 1977. The “scientific committee” report had a fascinating conclusion - “There is no adequate scientific evidence, “for logging, or against the logging”. A change in government resulted in a complete halt to the project in 1977 and elevation of part of the forest, along with additional land to an “International MAB”. This opened the need for good scientific research to commence. The National Research Council – a government institute (today the National Science Foundation), built in Sinharaja a Research Station for the purpose. We (March for Conservation, University of Colombo) moved in 1981, with the following question to be researched and clarified, in accordance with the “Scientific Committee” finding. 1) What faunal species exist. 2) What was the impact of logging. 3) Impact of peripheral Pinus Plantation. It is during these studies that we noted this unique assemblages of birds in the forest. Today we name it as “The mixed species feeding flock”. When we first recognized it we searched the past literature / information and realized that NO past references to this feature exist at Sinharaja. Mixed Species feeding was known to the ornithological world, from those at Horton Plains, Sri Lanka from the 1970’s. However, despite Sinharaja Forest Survey (Baker, 1936) of the past, there was no mention of this phenomenon. Based on global studies of similar phenomenon – “flock feeding”, we set about collecting data to understand this phenomenon in Sinharaja. After almost 30 years of study leading to over 25 publications (scientific and popular), 2 Phd’s, and 4 MSc’s the flocks are better understood today than before. I will be elaborating on these findings on the composition, distribution, behaviors, the dynamics of species, species segregations, functionality etc. Despite almost 30 years of study (abruptly ceased due to Covid - 19) the mystery still remains with numerous more questions to be answered.

Sarath W. Kotagama is widely recognized as Sri Lanka’s foremost ornithologist and conservation biologist, with an illustrious career spanning over five decades. His pioneered studies on mixed-species bird flocks, avifaunal ecology, and conservation strategies in tropical forests. He has authored numerous books and over 100 scientific publications, including the widely acclaimed *An Illustrated Guide to the Birds of Sri Lanka*. He served as chairman of BirdLife Asia Council and Council Member of BirdLife International Global Council (2015–2023). He was also the secretary general of the Pan Asian Ornithological Congress (1996–2000). He is the recipient of the Vidya Jothi National Award (2017), multiple Presidential Awards for Scientific Research, and the Distinguished Achievements Award for Extraordinary Service in Conservation by the Society for Conservation Biology, USA.

Plenary Speaker



Susanne Åkesson
Professor
Centre for Animal Movement Research, Lund University

Life in the Air Space - Non-Breeding Movements in Aerial Insectivorous Birds

Keywords: Migration, Fuelling, Routes, Timing

Spectacular long-distance migration has evolved repeatedly in animals enabling exploration of resources separated in time and space. In birds, movement patterns are largely driven by seasonality, cost of migration, and asymmetries in competition leading to differential migration. We have used miniature tracking technology to record timing, migration routes and non-breeding movements in aerial insectivorous birds. Our tracking data show that several species of swifts spend the non-breeding period on the wing, putting the physiological challenges to the extreme in these aerial insectivorous birds. Tracking data further reveal differential circannual timing and migration strategies between populations, including high mobility during the non-breeding period and differential migration speeds. Our tracking data further reveals the importance of moon cycle on fueling patterns, movement decisions and life-history events in nightjars. Here, I present our work on swifts and nightjars using dataloggers to track continental-wide movements of individuals.

Susanne Åkesson completed a PhD in Animal Ecology at Lund University on songbird orientation and migration in 1995. During a 2-year postdoc period at the Department of Zoology at Zürich University she studied landmark navigation in desert ants, whereafter she returned to the Department of Biology at Lund University in 1998 and started her career as a junior scientist investigating long-distance migration and navigation in birds and sea turtles. Since then, Susanne Åkesson has led her own research group (Animal Navigation Lab) and acted as the director for an excellence Center for Animal Movement Research (CAnMove) 2008-2020 at Lund University. She has led research projects on several expeditions to the high Arctic. Her current research involves tracking natural migrations using multi-sensor loggers and controlled lab experiments investigating the phenotypic characteristics of the endogenous migration programs in songbirds. The focus lies on behavioral and physiological adaptations to long-distance migration, including timing, fueling and space use, but also includes foraging ecology and conservation. Research includes work on songbirds, seabirds, raptors, swifts, and nightjars and are performed on several continents. Susanne Åkesson is a fellow of the Royal Institute for Navigation in London and a fellow if the Royal Academy of Sciences in Stockholm. She has won the Rosén's Linnaeus Prize in Zoology from the Royal Physiographical Society in Lund and the August Prize for the best non-fiction book in Sweden 2009.

Plenary Speaker



Toshitaka Suzuki
Associate Professor
Research Center for Advanced Science and Technology, The University of Tokyo

Animal Linguistics: Meaning, Syntax, and Gesture in Avian Communication

Keywords: Animal linguistics, Communication, Gesture, Referentiality, Semantics, Syntax

Language has long been regarded as a uniquely human trait, leading to a broader view of humans as fundamentally separate from other animals. Yet a growing body of research suggests that several cognitive capacities underlying human language may also be found in animal communication systems. For more than 20 years, I have investigated the communication system of the Japanese Tit (*Parus cinereus minor*) and identified several key elements of language. For example, Japanese Tits use distinct vocalizations to refer to external objects, such as specific types of predators. Beyond such referential communication, they combine meaning-bearing calls into sequences according to syntactic rules, generating messages whose meanings depend on both the component calls and their order. Their communication is not limited to vocal signals: they also use wing movements as intentional gestures to convey specific messages. In this talk, I will review my research on Japanese Tit communication and discuss how field-based studies of avian communication can help identify the elements of language and contribute to establishing a new scientific field, animal linguistics.

Toshitaka Suzuki is an associate professor at the University of Tokyo and a leading researcher in animal communication. For more than 20 years, he has studied communication systems of passerine birds, particularly species within the family Paridae, such as the Japanese Tit (*Parus cinereus minor*). His research has revealed several striking parallels between bird communication and human language, including referential signals, compositional syntax, and symbolic gestures. At the same time, he has clarified important differences between bird and human language, providing new insights into the evolution of language and communication. Through these discoveries, he has contributed to establishing a new interdisciplinary field, animal linguistics, which investigates linguistic capabilities in non-human animals using approaches from behavioral ecology, linguistics, and cognitive science. His work has been widely recognized internationally and published in leading scientific journals. He has received numerous academic and public awards in Japan for his contributions to science and education. More recently, he was selected as a Tinbergen Lecturer by the Association for the Study of Animal Behaviour.

Plenary Speaker



Xingfeng Si
Professor
College of Life Sciences, Zhejiang University

Mobile Links in Fragmented Forests: High-Resolution Camera-Trapping Monitoring of Plant-Frugivore Interactions on Reservoir Islands

Keywords: Community persistence, Functional connectivity, Habitat fragmentation, Island conservation, Plant-bird frugivory network, Seed dispersal

Species interaction is a key component of biodiversity. However, monitoring plant-bird frugivore mutualistic interactions remains challenging because frugivore foraging behaviour mostly occurs in the trees. Using arboreal camera-trapping, we continuously monitored plant-frugivore interactions across 22 subtropical forested islands and six nearby mainland sites in Thousand Island Lake, eastern China. Since June 2019, we have obtained over seven million photos and videos, documenting 28304 independent events involving 39 frugivorous birds and 31 fleshy-fruited plants. We analysed this high-resolution dataset of plant-frugivore networks, and found larger islands supported higher species richness, interaction richness, and greater community persistence (structure stability). Small islands had more connected, less modular, nested simplified networks dominated by small-bodied, highly mobile generalist birds that serve as critical mobile links sustaining cross-island meta-network cohesion and seed-dispersal functionality. Migratory birds accounted for 14% of total interactions, with 43% of migratory interactions recorded on small islands, which function as important stopover sites, while large islands act as refugia for resident frugivores. The invasive plant *Phytolacca americana* integrates into local communities primarily through generalist native birds and generates stronger impacts on species-poor, isolated islands. These findings challenge area-centric conservation frameworks, underscore trait-mediated community reassembly in fragmented landscapes, and advocate protecting both large habitat patches and small stepping-stone fragments, prioritizing mobile generalist frugivores and restoring biotic interactions to enhance ecosystem resilience in fragmented landscapes.

Xingfeng Si is a professor in the College of Life Sciences at Zhejiang University, China. As a community ecologist and biogeographer, he specializes in bird diversity and plant-animal interactions. His research focuses on how habitat fragmentation, land-use change, and urbanization impact biodiversity and community dynamics. Using the Thousand Island Lake and the Zhoushan Archipelago in Zhejiang Province as natural laboratories and birds as model taxa, he integrates functional and phylogenetic approaches to understand community assembly on islands, biodiversity changes following habitat fragmentation, and the effects of human activities on biodiversity maintenance. He has published around 100 papers in island biogeography, community ecology, conservation biology, and urban ecology. He serves as an editor or associate editor for several journals, including Avian Research, Biological Conservation, Journal of Animal Ecology, Methods in Ecology and Evolution, and Zoological Research. He received Cheng Tso-Hsin Young Ornithologist Prize in 2017 and was elected a Fellow of the International Ornithologists' Union (IOU Fellow) in 2022.

Youth Plenary Speaker



Umesh Srinivasan
Assistant Professor
Centre for Ecological Sciences, Indian Institute of Science

Tropical Montane Birds in a Hot and Degraded World

Keywords: Apparent survival, Humidity, Microhabitat, Mixed-species flock, Selective logging, Temperature

Climate change and habitat loss are amongst the greatest threats to the natural world. However, how these global change drivers interact to affect biodiversity at various levels of organisation remains understudied. I present 16 years of field-based data across elevational, habitat quality and temporal gradients to investigate how climate change and selective logging impact Eastern Himalayan birds with regard to (a) their abiotic and biotic environments, (b) individual body condition, (c) foraging and social behaviour, (d) population dynamics, and (e) community structure and function. Stark variation in temperature and resources across elevational gradients are associated with changes in within-species phenotype, multi-species social behaviour, survival rates, abundance, and community assembly. Superimposed on such increasingly warming-altered elevational gradients is intense environmental change arising from forest degradation. For instance, selectively logged forest is remarkably hotter, drier and resource-poor compared with primary forest, leading to the loss of temperature-humidity microhabitats that specialised understorey insectivorous bird species are highly dependent on. In logged forest, species that are unable to find and/or forage in optimal temperature-humidity microhabitats suffer progressive declines in both body mass and survival rates. Multi-species social behaviour (i.e., participating in mixed-species bird flocks) and elevational range shifts towards higher-elevation primary forest in response to warming can alleviate the demographic impacts of climate change and habitat degradation, highlighting the role of behavioural plasticity in dealing with novel environments in the Anthropocene. At the community level, climate change and selective logging appear to reinforce each others' impacts to favour smaller, low-elevation species. By studying the joint impacts of climate and land-use change from individuals to populations to communities, we aim to understand how montane birds will fare in the Anthropocene, and what we must do to conserve them.

Umesh Srinivasan is an Indian conservation biologist whose work integrates climate change ecology, behavior, and biodiversity conservation, with a strong focus on tropical mountain systems. He is an Assistant Professor at the Centre for Ecological Sciences, Indian Institute of Science. Trained initially in medicine, he transitioned to ecology, completing his PhD at the National Centre for Biological Sciences and postdoctoral research at Princeton University. His research examines how climate change and habitat degradation—especially selective logging—affect biodiversity across ecological scales. He combines long-term field studies in the eastern Himalayas with behavioral ecology, focusing particularly on birds and mixed-species flocks as indicators of ecosystem change. His seminal contributions include demonstrating how selective logging alters abiotic conditions and disrupts species interactions; revealing behavioral shifts in flocking and foraging under habitat disturbance; and linking climate change and land-use impacts to demographic and morphological responses in montane bird communities. His work has advanced understanding of species vulnerability in rapidly changing environments and highlighted the importance of biotic interactions in mediating responses to global change.

Youth Plenary Speaker



Ying Xiong
Professor
College of Life Sciences, Hebei Normal University

From Macroevolutionary Trade-offs to Neurogenomic Mechanisms in Avian Cognitive Evolution

Keywords: Avian cognitive evolution, Evolutionary trade-offs, Drd1 signaling, Neurogenomics, Behavioral adaptation, Domestication

Understanding the evolutionary drivers and neurobiological mechanisms of complex phenotypic traits remains a central challenge in evolutionary biology. Integrating macroevolutionary patterns, life-history trade-offs, and micro-level genomic mechanisms, this study bridges macroevolutionary patterns and neurogenomic mechanisms to elucidate the drivers of avian cognitive evolution. At the macroevolutionary scale, we show that birds navigate evolutionary conflicts through life-history adjustments: while enlarged brains compensate for the survival costs of sexual ornaments in long-tailed birds, the energetic demands of antagonistic coevolution in brood parasites and hosts drive a trade-off favoring accelerated growth over encephalization. Zooming into micro-evolutionary scales, we demonstrate that domestication can selectively enhance specific problem-solving innovations. This behavioral shift is mediated by social selection (mate preference) and anchored by a lineage-specific mutation in the dopamine D1 receptor (Drd1), which amplifies cAMP signaling. Collectively, these findings provide a synthetic framework for understanding how cognitive traits are shaped by the interplay of selection pressures, metabolic trade-offs, and molecular innovation.

Ying Xiong is a Professor of Zoology at Hebei Normal University. He received Ph.D. from Institute of Zoology, CAS in 2021. His research focuses on how energy allocation trade-offs drive phenotypic adaptation and shape biodiversity patterns in birds. A central theme is testing the evolutionary debt hypothesis—how historically successful adaptive strategies can become liabilities under rapid anthropogenic change. His work integrates macroevolutionary comparative methods, physiological data, genomics and behavioral experiments to: 1) decipher the coevolution of costly traits (e.g., cognition, ornamentation, dispersal morphology) and their life-history trade-offs; 2) identify convergent energy strategies in response to key pressures like insularity, and marine colonization; and 3) link historical adaptive pathways and key genes to contemporary extinction risk, aiming to build a predictive theory of species vulnerability for biodiversity conservation.

Workshop

Shorebird Science for Conservation

14 November 2026 | 14:00-18:00

Organisers: Ying-Chi Chan, Elize Ng, David Li, Zhijun Ma

Location: LT50

The East Asian-Australasian Flyway is used by millions of shorebirds on their annual migration. Despite their ecological importance, shorebird populations across the flyway face mounting pressures such as land use changes, pollution, hunting and climate change.

This side event brings together researchers and conservationists to present recent findings of research projects in the flyway and discussion of emerging challenges and opportunities for shorebird conservation.

All AOC 2026 attendees are welcome.

Meeting

Asian Ornithological Alliance Meeting

15 November 2026 | 17:30-19:30

Location: Global Learning Room

Delegates are welcome to formally submit proposals to determine the host country and venue for the next AOC. These bids will detail the proposing institutions' infrastructure, local ornithological significance, and logistical capabilities, allowing the Asian Ornithological Alliance steering committee to evaluate and vote on where the next gathering of Asia's bird research and conservation community will take place.



Nordmann's Greenshank
(Jason Vassallo, Cornell Lab of Ornithology, Macaulay Library)



Black-tailed Godwit
(Shashank Dalvi)

Asian Ornithological Alliance

Roundtables



Asian Songbird Trade Conservation Interventions

15 November 2026 | 17:30–19:00

Organisers: Serene Chng, Jessica Lee

Location: LT53

The illegal and unsustainable songbird trade in Asia poses a threat to the survival of in-demand species. As the issue has gained greater prominence in the past decade, various interventions have been implemented to protect and conserve songbirds threatened by trade.

Organised by the IUCN SSC Asian Songbird Trade Specialist Group, this side event will share some examples of initiatives ranging from local communities to international policy, and discuss emerging challenges and potential opportunities.

We invite all interested AOC 2026 attendees to join us and explore avenues for collaboration.

Conservation on Migratory Landbirds in Asia, Including Establishment of Platform and Compilation of a Strategy Roundtable



15 November 2026 | 17:30–19:30

Organisers: Simba Chan, George Gale

Location: LT50

The main purpose of this roundtable is to consult ornithologists in Asia on their views on conservation of migratory landbirds, including: what are the species/species groups of concern, what are the threats that are not well-studied, what are the important sites to migratory landbirds, what are the gaps of knowledge on migratory landbird study and how to improve regional cooperation and coordination. The discussion result may be the basis of compilation of a strategy on conservation of migratory landbirds in Asia.



Bali Myna
(Forest Botial-Jarvis, Cornell Lab of Ornithology, Macaulay Library)



Siberian Blue Robin
(Kenneth Lam, Cornell Lab of Ornithology, Macaulay Library)



Amur Paradise-Flycatcher
(Robert Hackel, Cornell Lab of Ornithology, Macaulay Library)

Activities: Guided Tours

Birdwatching

Singapore is one of the best places in the world to catch up with a number of endangered and elusive bird species. Join us for bird-watching sessions across four nature parks and green spaces to have a chance at finding some of the following birds: the critically endangered Straw-headed Bulbul, Pink-necked Green Pigeon, Red-legged Crake, Red-crowned Barbet, Asian Fairy-bluebird, Buffy Fish Owl and many more!

Dairy Farm Nature Park (Saturday, 14 November 2026 | 07:30-10:30)
Pasir Ris Park (Saturday, 14 November 2026 | 07:30–10:30)
Singapore Botanic Gardens (Monday, 16 November | 07:30–09:30)
Pulau Ubin (Wednesday, 18 November | 07:30–12:30)

Bird Society of Singapore

Discover Singapore: Half-Day Cultural Heritage Tour

Step into Singapore's rich multicultural past with the Half-Day Cultural Heritage Tour! Join us for a 4-hour guided journey through three iconic heritage destinations: the Indian Heritage Centre, Kampong Glam, and Chinatown.

Discover the stories, traditions, and historical landmarks that have shaped Singapore's diverse cultural identity. From exploring the heritage of Singapore's Indian community to experiencing the vibrant charm of Kampong Glam and the historic streets of Chinatown, this tour offers a meaningful opportunity to learn more about the cultures that make Singapore unique.

Date: 18 November 2026
Time: 09:00-13:00
Price: S$60 per person
Capacity: No limit, event will proceed with a minimum of 10 sign ups. First come, first served
Includes: Singapore Tourism Board-certified tour guide, transport, and necessary entrance tickets for included attractions

Singapore TOURISM BOARD

Birds of Singapore



Blue-winged Pitta (Collin Chua)



Pink-necked Green Pigeon (Sin Yong Chee Keita)



White-rumped Shama (Joseph Lin)



Spotted Wood Owl (Yip Jen Wei)



Crimson Sunbird (Collin Chua)



Straw-headed Bulbul (Yip Jen Wei)



Asian Fairy-bluebird (Lester Loo)



Buffy Fish Owl (Collin Chua)



Red-legged Crake (Sin Yong Chee Keita)



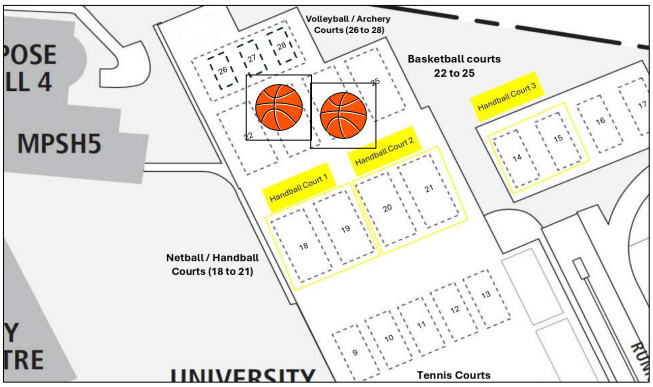
Mangrove Pitta (Lester Loo)

Activities: Basketball

14 November 2026 | 15:00–19:00

Location: NUS Sports Complex Basketball Court 22 & 23

Take a break from the lecture halls and trade your binoculars for a basketball at the Social Basketball Session. This informal recreational event is the perfect opportunity for delegates, researchers, and students to unwind, stretch their wings, and network through friendly pickup games. Whether you are looking to showcase your flock's teamwork, shoot some casual hoops, or simply cheer from the sidelines, all skill levels are welcome. It is a fantastic chance to foster cross-regional camaraderie and experience the vibrant NUS campus environment beyond the academic symposia.



Banquet Dinner

16 November 2026 | 18:00–22:00

Location: Mandai Singapore Zoo Forest Lodge

The conference dinner for registered participants will be held at the Forest Lodge, Singapore Zoo. The dinner programme will feature a sit-down dinner, complimentary free-flow juices, beer, and house wine, as well as a special avian appearance. Round-trip transportation to and from the Singapore Zoo will be provided, with departure from NUS scheduled for approximately 6:00 PM. Further transportation details will be shared during the conference.

We look forward to an enjoyable evening of networking, entertainment, and celebration with fellow conference participants.

Mandai
NATURE

Posters P001 – P020

P001 A189	Constitutive Active GCGR is Strong Cognate Receptor of Omega-3 for Lipid Regulation in Birds **Xue Wang**
P002 A505	Intraspecific Morphological Variation predicts Niche Breadth and Range Size in Bulbuls (Pycnonotidae) **Ekadh Ranganathan**
P003 A191	Productivity and Human Disturbance Shape Contrasting Distribution Patterns of Core and Occasional Bird Species in a Subtropical Forest Reserve in Southern China **Qing Quan**
P004 A192	Season-dependent Trait-environment Filtering influences Interaction Networks in Mixed-species Bird Flocks **Yong Shen**
P005 A197	Synergy-driven Mechanism of Avian Diversity Distribution Patterns Across China in the 21st Century **Thi Kieu Trang Ngo**
P006 A218	Imperfect Detection Biases β Diversity Estimates based on whether Species are Shared between Sites **Yue Wang**
P007 A233	Vertical and Horizontal Habitat Utilization Among Avifauna in the Dambulla Kaludiyapokuna Forest Reserve, Sri Lanka **Umashi Wijerathna**
P008 A256	Comparative Assessment of Waterbird Diversity and Distribution in three selected wetlands of Uttarakhand and Uttar Pradesh, India **Ashish Kumar Arya**
P009 A301	Assessing Subspecific Variation in the Oriental Magpie-Robin (*Copsychus saularis*) using an Integrative Approach **Reva Duraphe**
P010 A328	Northward range expansion in two tropical bird species with modeling for climate change **Rajgopal Patil**
P011 A337	Avian Diversity Responses to Land-Use Change and Agricultural Transition in an Agricultural Landscape of Southwestern China **De-pin Li**
P012 A352	Different Environmental Templates Shape Multidimensional Bird Diversity in Plateau-Plain and Montane Landscapes of Yunnan **Shunyu Yao**
P013 A356	Coexistence Mechanisms of Morphologically Convergent Fulvetta Species in the Gaoligong Mountains **Yuting Zhang**
P014 A483	DNA barcoding of passerine birds in Iran **Sahar Javaheri Tehrani**
P015 A504	Scale-dependent taxonomic and functional β-diversity of waterbirds in coal-mining subsidence lake networks **Jinming Zhao**
P016 A172	Seasonal effects of urban park landscape structure on taxonomic, functional, and phylogenetic diversity of birds **Jinyu Yang**
P017 A255	Scaling up bird conservation through citizen science: policy assessment, conflict mitigation, and nationwide monitoring networks **Zhijian Liang**
P018 A219	Avian lung single-cell atlas elucidates evolutionary divergence in endothermic respiration **Yan Hao**
P019 A500	Openly Share Mates or Cheat? Alternative Evolutionary Routes to Multiple Mating in Birds **I-Hsuan Chen**
P020 A108	Nesting Traits of East Asian Arctic-Breeding Shorebirds in Response to Climate Variability **Valeria Selezneva**

Posters P021 – P040

P021 A194	Dietary Divergence Drives Passerines' Spatial Distribution Between Elevational Zones in Baima Snow Mountain, Yunnan **Yajin Yang**
P022 A259	Nest Predators and Reproductive Success in the Chinese Francolin (*Francolinus pintadeanus*) Across Two Nature Reserves of Tropical Hainan Island, China **Qingling Zeng**
P023 A296	Comparison of bark-gleaning birds in pine and oak forests of the Western Himalaya in Uttarakhand, India **Maitreya Sukumar**
P024 A311	Community characteristics of potential nest predators and predation risk of red junglefowl under different disturbance intensities **Yishuo Ding**
P025 A335	Pilot Testing Bird Ringing in the University of the Philippines, Diliman **Lydia Vittoria Cabanlig**
P026 A365	Contrasting dietary responses to temporal variation in two sympatric pheasants **Jianghong Ran**
P027 A499	Incubating Alone: Male Parental Care in a Sex-role-reversed Polyandrous Bird **Alina Sunilkumar Mini**
P028 A168	Cocktail of Contaminants: Spatiotemporal Exposure to Trace Metals and PFAS in Adélie Penguins under Antarctic Sea-Ice Fluctuations **Yan Liang**
P029 A235	Dynamics of waterbird community diversity in natural-artificial composite wetlands in lakeshore under extreme climatic conditions **Xianglin Ji**
P030 A293	Urban noise alters behavior but not physiology of nestlings in the Oriental Magpie (*Pica serica*) **Eunmin Shin**
P031 A321	"Periodic Table" of forest birds in Vietnam **Kalyakin Mikhail**
P032 A330	The Impacts of Coffee Cultivation and Shade-Pruning Intensity on Avian Communities and Foraging Behaviour. **Gauranshi Chamoli**
P033 A380	Managing food resource in human-modified wetland for waterbirds – A case study in Deep Bay Area, HK **Sze On Ng**
P034 A390	Habitat associations of open-country raptors in a rice-dominated landscape in Central Thailand **Rongrong Angkaew**
P035 A487	Tree cavity-rich farm landscapes sustain breeding populations of the endemic and Endangered Forest Owlet in Dangs, India. **Kaushalkumar Patel**
P036 A086	Comparative Genomics and Population Genetics of African Sacred Ibis in Taiwan **Yu-Ren Wang**
P037 A254	Essential Biodiversity Variables (EBVs) as an Optimal Format for Habitat Suitability Index of the Black-Necked Crane Across Life Stages **Yu Zhong**
P038 A375	Illustrations of Handbook of the Birds of the World: Datasets of RGB values and color classification of birds **Yuqing Han**
P039 A498	Improving Confidence in Seabird Impact Assessments: The Value of Data-Driven Observer Training **Ramit Singal**
P040 A122	East Asian Little Terns' migration patterns vary depending on their breeding sites **Masaharu Hayakawa**

Posters P041 – P060

P041 A135	Study of northward migration of waterbirds and shorebirds on Kamchatka, Russia **Yuri Gerasimov**
P042 A206	Tidal connectivity between tidal flats and hinterland habitats mediated by waterbirds in the Korean Getbol **Jin-Won Lee**
P043 A216	Preliminary Insights into the Community Composition and Migration Patterns of Migratory Raptors at Baiwangshan, Beijing **Chuanrong Jing**
P044 A312	Restoring Flyway Stopovers: Enhancing Migratory Passerine Conservation through Paddy Field Revitalization in Abandoned Farmland in Hong Kong **Yat Long Anson Tse**
P045 A402	International Cooperation for Black-necked Crane Conservation: Progress, Challenges, and Strategic Priorities **Heqi Wu**
P046 A413	The migration passage pattern of ~100,000 annual raptors over Laotieshan, a key bottleneck in NE China along the East Asian–Australasian Flyway **Danmeng Liu**
P047 A445	Long-Term Monitoring of Migratory Landbirds in Mongolia: Integrating Bird Ringing and Biologging **Batmunkh Davaasuren**
P048 A463	Body mass changes in songbirds stopping over at the unexplored area of the East-Asian Australasian flyway **Anatolii Lukin**
P049 A503	Wintering shorebird mortality due to deterrence nets at razor clam farming mudflats in Southeastern China **Siyu Sun**
P050 A404	Genomic signatures of endangerment: effective population size and heterozygosity in Galliformes **Durbadal Chatterjee**
P051 A134	Pycnonotus sinensis and P. taivanus maintain species boundaries despite gene flow **Ching-Yun Wu**
P052 A187	Late-Holocene Gene Flow Implicates Feather Genes and Other Functional Loci in a Rapid Radiation of Tropical Songbirds **Sijun Li**
P053 A382	Draft Genome of the Endangered South Philippine Hawk-eagle (Nisaetus pinskeri) Enables Genome-wide Diversity and Demographic History Analyses **Dhan Mikhail Perdon**
P054 A407	Inbreeding and Extinction Risk in an Endemic Island Bird: Conservation Implications for the Narcondam Hornbill **Murugan Shanthakumar**
P055 A292	A Health Risk Assessment of Mercury Exposure and Selenium Protection in Breeding Bridled Terns (*Onychoprion anaethetus*) in South China Sea **Chun Ting Chung**
P056 A379	Construction and Practice of Urban Wild Raptor Rescue System: A Case Study of Shenyang Raptor Rescue Center **Die Meng**
P057 A381	Ardeidae as Reservoirs and Domestic Poultry as Epidemiological Bridges for Parasite Transmission to Humans: A One Health and Socio-Ecological Perspective from Ketingan Village, Indonesia **Carrissa Putri Amelia**
P058 A341	The Human Dimensions of Vagrant Bird Sightings in Japan: Coordination among stakeholders for voluntary ecotourism. **Shigeru Nakamura**
P059 A091	Hidden in Holes: Research Gaps and Current Knowledge on Philippine Woodpeckers **Vince Angelo Gicaraya**
P060 A136	Genetic Assessment of Wreathed Hornbills (*Rhyticeros undulatus*) at Khao Yai National Park, Thailand **Darunee Markviriya**

Posters P061 – P080

P061 A232	Mapping resource–risk landscapes to identify priority areas for vulture conservation in central India **Aishwarya Laghate**
P062 A485	Satellite tagging of a Lappet-faced Vulture (*Torgos tracheliotos*) chick in AlUla, Saudi Arabia: methodological lessons from two field missions **Benjamin Lee**
P063 A161	The larger the egg, the safer the nest: A study on the negative correlation between nest predation rates and egg size of two tropical phasianids in Hainan **Xiaodong Rao**
P064 A171	Diet of Urban Pink-Necked Green Pigeons Revealed through eDNA **Philip Johns**
P065 A196	Non-breeding parental care strategies for Siberian cranes based on breeding site climate debt drivers **Qingming Wu**
P066 A207	How Do Oriental Reed Warblers Recognize Cuckoo Eggs? **Yan Hanlin**
P067 A208	Two sides of state-dependent personality **Yiting Jiang**
P068 A217	When puncturing fails: nest desertion as an alternative egg rejection strategy in the Oriental Reed Warbler Acrocephalus orientalis **Guobin Zheng**
P069 A230	How Birds Defend Their Nests: Defensive Strategies of Hirundo daurica Against Nest Usurpation by Passer montanus **Yangyang Cai**
P070 A242	Duet or not: Social context shapes joint vocal displays in the Java sparrow **Yuhan Zhang**
P071 A266	Diurnal activity of Brandt's Voles in relation to their delivery as prey for nestling Saker Falcons in Mongolia **Lkhagvasuren Batmunkh**
P072 A277	Plasticity and the structural characteristics of personality traits in captive-reared Japanese quail during ontogeny **Xiao-Yuan Wu**
P073 A398	Communicating danger through visual and vocal signals in the barn swallow (Hirundo rustica) **Kuan-Hao Chen**
P074 A441	Potential Avoidance of Fecal–Oral Transmission Through Land-based Defecation in wading birds **Shoma Osada**
P075 A448	Diel shifts in vigilance strategies among sympatrically foraging shorebirds **Masahiro Saito**
P076 A475	Acoustic distance, not phylogenetic relatedness, predicts unlearned recognition of heterospecific snake alarm calls in three sympatric Parids **Jungmoon Ha**
P077 A110	Asymmetry in responsiveness to playback of geographic song variation after a recent range expansion in Light-vented Bulbuls **Xiaoying Xing**
P078 A152	Effects of Environmental Factors on Bird Song Amplitude **Xiaoxuan Yu**
P079 A174	Exploring Human Language Features in Bird Communication Systems **Miao Tian**
P080 A322	Reliability of BirdNET for Target Species Detection and the Implications for Interpreting Migratory Bird Phenology in Jahoo, Cambodia **Chanel Ng**

Posters P081 – P100

P081 A346	Comparison of Automated and Manual Acoustic Identification on Estimates of Bird Species Richness in the University of the Philippines-Diliman **Lorenz Isaak Cea**
P082 A406	Singing solos or coordinating a duet together: whether cooperation in singing influences the evolution of birdsong **Jiaying Yang**
P083 A442	Passive acoustic monitoring of the Java sparrow (*Lonchura oryzativa*): diel vocal activity and monitoring recommendations **Pramana Yuda**
P084 A474	Call combinations reduce ambiguity of alarm signals in Azure-winged magpies **Xiang Gong**
P085 A076	The Impact of Urban Park Habitat Characteristics on Avian Communities: A Case Study of Shanghai **Gang Yang**
P086 A237	Local observations, broader insights: Seasonal bird assemblages in a peri-urban landscape of the Terai-Bhabar region, Uttarakhand, India **Sarabjeet Kaur**
P087 A286	Beyond park boundaries: how surrounding landscape shape avian community structure in Shanghai parks **Yan Xuan**
P088 A307	Baseline Assessment of Artificial Light at Night on Waterbirds in Deep Bay **Carmen Or**
P089 A342	Birdz n the Metro: Using Trait-Matching to evaluate the effect of urbanization on Frugivory links in Metro Manila Green Spaces **Sean Keoni Ragragio**
P090 A468	Exploring the use of Bluetooth Low-Energy tags on birds across an urban-forest gradient in Singapore **Megan Yip**
P091 A472	Linking Citizen Science and Spatiotemporal Land Use–Land Cover to Model Bird Encounter Rate and Relative Abundance Across Uttar Pradesh, India **Anamika Gautam**
P092 A140	Avifaunal community composition and beta diversity across a restoration gradient within a tropical biological corridor in Sri Lanka **Isuru Anuradha Kodithuwakku**
P093 A169	Screening of Microsatellite Markers in the Sichuan Partridge (*Arborophila rufipectus*) Based on Whole-Genome Resequencing **Bisong Yue**
P094 A195	Mitigating interspecific competition between Great Comorant (*Phalacrocorax carbo*) and Black-faced Spoonbill (*Platalea minor*) for nest site through selective deterrence **In-Ki Kwon**
P095 A198	Environmental Driving, Human Impacts and its Public Conservation Awareness for Population Characteristics Pattern of Migratory Cranes in Punjab Province, Pakistan **Hongfei Zou**
P096 A201	Conservation Genomics of the two subspecies of the Critically Endangered Rufous-Fronted Laughingthrush (*Garrulax rufifrons*) **Ruoxi Yuan**
P097 A221	Conservation genomics of two endangered buntings reveal genetic diversity before and after severe population declines **Dezhi Zhang**
P098 A249	Evaluating Environmental Determinants of Hinterland Habitat Selection by Waterbirds During High Tide in the Korean Getbol **Yun Seongho**
P099 A276	Applying Space-Air-Ground Integrated Approach to Decode Hierarchical Nest Site Selection of a Flagship Bird Species in Alpine Wetlands of Qinghai-Tibet Plateau **Yifei Wang**
P100 A338	Occupancy-based monitoring reveals a decline in the breeding population of the Australasian Grass-Owl in Taiwan **Jo-Szu Tsai**

Posters P101 – P105

P101 A359	From restoration to Stewardship: Nesting Success, Feeding Ecology and Youth Participation in Blue-throated Bee-eater Conservation in Singapore, Pulau Ubin **Jan Tan**
P102 A376	Genomic footprints of rapid demographic collapses and recovery in the Black-necked Crane (*Grus nigricollis*) **Feng Dong**
P103 A417	Breeding Ecology of the Glossy Ibis (Plegadis falcinellus) in Nalati Wetland, Xinjiang, Based on Unmanned Aerial Vehicle Monitoring **Chen De**
P104 A486	Poaching-driven decline and recovery prospects for the Grey-backed Myna in eastern Java **Hariyawan Agung Wahyudi**
P105 A496	Building a science-based conservation framework through research and stakeholder collaboration for the endangered Australasian Grass-Owl in western Taiwan **Mu-Ming Lin**

A063 Talk

Relative abundance of songbird migrants in autumn in the arid belt of Central Eurasia

Nikita Chernetsov[1,2], Vadim Khaitov[3], Andrey Gavrilov[4], Mikhail Markovets[1,2], Mikhail Shpigelman[1], Kazhmurat Akhmedenov[1]

[1] *Makhambet Utemisov West Kazakhstan University, Uralsk, Kazakhstan*
[2] *Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia*
[3] *St. Petersburg State University, St. Petersburg, Russia*
[4] *Institute of Zoology of the Republic of Kazakhstan, Almaty, Kazakhstan*
Keywords: Migration, Flyway, Central Asia, Abundance

The arid belt of central Eurasia is a formidable obstacle for annual migratory movements of songbirds. Some of them cross it directly, whereas others make detours. We analysed the largest available dataset based on songbird trapping at autumn migratory stopovers between the Caspian Sea and the Altai, collected in 1973–2024. The relative abundance of migrants included into this study generally met the expectations based on the position of their non-breeding grounds. However, several notable exceptions from this pattern were found. Relative abundance of Eurasian Reed Warblers and Red-breasted Flycatchers during autumn passage was not predicted by the geographic location of their wintering areas. Eurasian Reed Warblers spend winter in Africa, but occur at eastern sites in Central Asia more often than expected. Red-breasted Flycatchers and Taiga Flycatchers, conversely, occur at the eastern sites less often than expected from their non-breeding areas in southern and southeastern Asia. Some species cross the arid belt directly, whereas others make detours that apparently follow the historical development of their ranges. The history of expansion to the current breeding range in the northern Palaearctic from glacial refugia, impacts the distribution of songbirds during their passage across the central Eurasian arid belt.

A067 Talk

Bird species diversity at long term forest restoration plots in Northern Thailand

Htet Aung Khant[1]

[1] *Environmental Science Research Center, Faculty of Science, Chiang Mai University, Thailand*
Keywords: Forest restoration, Northern Thailand, Bird species diversity, Framework species method, Mackinnon species list

Tropical forest restoration aimed to recover not only tree cover but also ecological interactions that sustained biodiversity. Chiang Mai University's Forest Restoration Research Unit (FORRU-CMU) had applied the Framework Species Method in Northern Thailand for over 30 years. Birds served as key mobile links for seed dispersal and pest control, but the timeframes and requirements for habitat-specialist birds to return to restored forests had remained unclear. Bird surveys were conducted in restoration plots at Ban Mae Sa Mai, Doi Suthep–Pui National Park, and were compared among different restored plots, a control plot, and nearby natural forest. Species accumulation curves indicated that taxonomic richness

increased with restoration age. 147 bird species were recorded across all habitats. The reference forest had the highest richness (77 species), followed by the 24-year-old plot (71 species). The 13-year-old plot supported 64 species, whereas the control plot had 44 species. These findings indicated that bird species richness recovered within 24 years under the Framework Species Method; however, the absence of habitat specialists in older plots suggested that further structural maturation was needed to restore the full range of avian ecological roles. Long-term monitoring remained essential to distinguish partial recovery from a fully functional forest ecosystem.

A076 Poster

The impact of urban park habitat characteristics on avian communities: a case study of Shanghai

Gang Yang[1]

[1] *Natural History Research Center, Shanghai Natural History Museum, Shanghai Science and Technology Museum, China*

Keywords: Urbanization, Urban green space, Avian community, Shanghai

The effects of urbanization on birds is to provide new ecological niche with directional selection pressure or a consequence of human induced changes on landscapes and ecosystems, which influences taxonomic, phylogenetic and functional aspects of bird communities. According to the theory of community succession and inter-species competition, the effect of urbanization on bird community, and niches of group and species are periodic in different periods. As the region with the highest urbanization rate in China, Shanghai has experienced the early, middle, late industrialization and post-industrial periods. Meanwhile, data and information about birds have been recorded since 1900. Therefore, Shanghai is a typical sample to study the urbanization-bird community relationship. In this study, we choose Shanghai and its surrounding area as the sites which has experienced the whole cycle of urbanization. The contemporary and historical distribution of bird community was analyzed. The historical data and field investigation will be used to quantify birds group, group niche breadth and competition relationship among different urbanization periods. We discuss dynamic change of different species at every period of the urbanization and ecosystem function and contribution of key species to the community, and then explain how urbanization-bird community relationship mechanism.

A079 Talk

Pellets and online citizen science uncover the generalist diet and year-round breeding of the Philippine Scops Owl *Otus megalotis*

Maria Ramone Tumonong[1], Vince Angelo Gicaraya[1], Ma. Theressa Aguila[2], Cherry Ann Espanto-Maas[3], Carmela Española[1]

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[2] *Philippines*
[3] *Philippine Science High School - Ilocos Region Campus, Philippines*

Keywords: Citizen science, Natural history, Nocturnal raptor ecology, Luzon Lowland Scops Owl, Strigidae, Urban ecology

The Philippine Scops Owl, *Otus megalotis* (Walden, 1875), is a nocturnal raptor endemic to the islands of Luzon, Marinduque, and Catanduanes in the Philippines. Although relatively common, the species' elusive nature limits ecological research. This study aimed to ascertain the diet composition and reproductive phenology of the *O. megalotis*. Diet composition was determined through analysis of pellets collected in the University of the Philippines Diliman (UPD) from the years 2009, 2014–15, 2018–19, and 2023–24. The breeding season was established by collecting citizen science data from platforms including eBird, iNaturalist, and Facebook. A total of 1,098 media dating from 2007 until 2025 were analyzed. Juveniles were observed for each month of the year in areas under climate type 3. The species exhibited variation in timing of breeding across geographical regions and climate type. The owls in UPD preyed on insects (Orthoptera, Coleoptera, Lepidoptera, Hymenoptera, and Ephemeroptera), mammals (Rodentia, Eulipotyphla, and Chiroptera), frogs, birds, and reptiles, revealing a generalist diet in an urban setting. This trophic flexibility allows *O. megalotis* to exploit urban resources across seasons without depending on the periodicity of any single food resource. Seeds were found in some pellets suggesting its potential as a secondary seed disperser. Our findings provide much-needed baseline ecological information on *O. megalotis*, and highlight the value of citizen science in advancing our understanding of the ecology of understudied species.

A081 Talk

Avian GCGR: a novel perspective for obesity treatment and a natural doping receptor for Omega-3 that enhances endurance during bird migration

Chang Zhang[1]

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Keywords: Avian GCGR, Obesity, Constitutive activation, Omega-3, Lipid metabolism, Thermogenesis

Birds have unique physiological adaptations for flight, including high metabolic rates, and efficient fat utilization. Despite gaining moderate weight during flight, they accumulate minimal fat—a mechanism that has puzzled scientists for over a century. In contrast, human obesity is a leading global health issue and a major cause of mortality. Managing obesity primarily involves reducing and maintaining body fat. Through cross-species single-nucleus RNA sequencing, we discovered that the glucagon receptor (GCGR) is highly expressed in avian adipocytes but not in other vertebrates. Avian GCGR enables rapid fat utilization, helping birds stay lean. When we introduced avian GCGR or a constitutively active mutant (human GCGRH339R) into the white adipose tissue of mice on a high-fat diet, the mice showed significantly faster fat metabolism, reduced body weight, and improved energy expenditure. We also found that Omega-3 polyunsaturated fatty acids activate avian GCGR

signaling. These findings suggest that avian GCGR plays a key role in lipid metabolism and thermogenesis. Avian GCGR also acts as a receptor for Omega-3, which may support endurance flight in birds.

A084 Talk

Satellite tracking reveals movement patterns of Sarus Crane in Nepal

Dikpal Krishna Karmacharya[1,3,4], Arjun Kurmi[2], Kailash Jaiswal[2], Ram Adhin Yadav[2], Krishna Prasad Bhusal[3], Ankit Bilash Joshi[3], Kshitz Paudel[4], Zhengwu Pan[5], Yumin Guo[5]

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[2] *Green Youth of Lumbini, Rupamdehi, Nepal*
[3] *Bird Conservation Nepal, Lazimpat, Kathmandu, Nepal*
[4] *Third Pole Conservancy, Pipeline, Bhaktapur, Nepal*
[5] *Wildlife Protection and Utilization, Beijing Forestry University, Beijing, China*
Keywords: Sarus Crane, Satellite telemetry, Transmitter, Tagging, Movement ecology

Satellite telemetry provides real-time data of movement patterns of wildlife that are not possible with any other techniques. Such information is lacking from Sarus Crane, the tallest flying bird in the world. Therefore, we deployed solar powered GSM-GPS satellite transmitters on six sub-adult Sarus Cranes in Nepal to know their movement patterns. Using Minimum Convex Polygon we found their home range from 3.47– 7.12 km, maximum flight distance 10.83 km and the maximum flight altitude up to 277 m ASL. One of them travelled 9.75 km south to India crossing the trans-borders. Two of them arrived to Banganga River and Dano River bank during the dry season. One died due to potential feral dog or jackal attack at night. Our results demonstrated that the Sarus Crane the local breeder in Nepal travels long distance in search of food and water up to India. We also found that the feral dogs as the major emerging threats to this majestic birds. This study provides the hot spots and risk zones of the Sarus Cranes which are crucial for the long term conservation management of species in Nepal.

A086 Poster

Comparative genomics and population genetics of African Sacred Ibis in Taiwan

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Keywords: Invasive birds, Avian genome, Avian population genetics, African Sacred Ibis

Foreign species are often introduced to alien environments from their original habitats intentionally or unintentionally during human activities. Some of these foreign species cause negative impacts on the economy, local ecosystems, and residents and become invasive species. The African Sacred Ibis *Threskiornis aethiopicus* is an avian species widely kept in many zoos around the world, which gave them the chance to escape and establish invasive populations in several places, including Taiwan. These African birds were first recorded at

Guandu, Taipei City, in 1984 with six individuals and expanded rapidly over the past three decades. We assembled and annotated the first chromosome-level genome assembly of the African Sacred Ibis. Comparative genomic methods were performed to detect positively selected genes and analyze the evolution of protein and gene families. We also resequenced 34 individuals from Taiwan, including 27 wild and 7 captive individuals, for population genetic analysis. Population structure analysis showed no structure in the wild population, indicating that the wild population originated from captive individuals. Effective population history reconstructed using an LD-based method pinpointed the timing of escape and expansion. This study provides insight into avian biological invasion and may help control invasive bird species.

A090 Talk

Engineered for the city: anthropogenic nest materials and nesting innovations among urban birds in the Philippines through citizen science

Vince Angelo Gicaraya[1], Charlise Cassaundra Alagon[1], Zoe Monique Soliva[1], Charles Nathaniel Avila[1], Gia Alessandra Beatrice Mendiola[1], Matthew Anthony Ranin[1]
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Keywords: eBird, Facebook, Nesting behaviour, Plastic, Social media

Urbanization has caused birds to incorporate anthropogenic materials into their nests. While numerous studies have examined this phenomenon globally, comprehensive research in the Philippines remains limited. Through citizen science, we investigated which Philippine urban bird species use anthropogenic nest materials (ANMs), identified the ANMs observed, and determined which species utilize unconventional nest sites. We analyzed 369 nesting records of 27 bird species across Facebook, eBird, and a Google Form survey, dating from April 2012 to May 2025. 12 species used ANMs, with *Cinnyris jugularis* and *Pycnonotus goiavier* being the top users. ANMs were present in 58 nests, and plastic (e.g. string, wrappers, rice sack filaments) was the most prevalent. Nesting innovations in utility poles, street lamps, and building crevices were observed in nine bird species across 35 records. Our study contributes 10 additional species to the most recent global list of 176 birds utilizing ANMs namely: *C. jugularis*, *O. chinensis*, *P. goiavier*, *A. nipalensis*, *L. punctulata*, *L. atricapilla*, *H. javanica*, *G. sulphurea*, *A. leucorynchus*, and *A. cristatellus*. Moreover, our findings provide evidence that urban birds in the Philippines are adapting to human-altered environments and highlight the value of citizen science in understanding avian behavior.

A091 Poster

Hidden in holes: research gaps and current knowledge on Philippine woodpeckers

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Keywords: Asian woodpeckers, Eltonian, Hutchinsonian, Picidae, Southeast Asia, Raunkiæran

The Philippines has 11 woodpecker species of which nine are endemic to the country, the highest endemism in Southeast Asia. Despite their potential keystone role in tropical forests, woodpecker research remains limited. Here I present the results of a comprehensive literature review and provide a summary of current knowledge on Philippine woodpeckers using entries from Birds of the World, local field guides, and publications and reports. A total of 22 articles were consolidated from 1971–2025. Majority of these studies were ex-situ (n=13), whereas in-situ (n=6) and integrative studies (n=3) were particularly less common. Notably, 83% (n=5) of all in-situ studies were published in the last six years (2019–2025). Most of the work involving Philippine woodpeckers is heavily skewed toward Systematics and Evolution, followed by Morpho-anatomy, and Genetics. Biology and ecology studies remain scarce, with many species lacking dedicated field studies— highlighting a significant Raunkiæran, Hutchinsonian, and Eltonian shortfalls. This is prominently evident in *C. lucidus*, *C. erythrocephalus*, *M. fuliginosus*, *M. pulverulentus*, *D. everetti*, *Y. maculatus*, and *Y. ramsayi*. With only 22 studies in 55 years, Philippine woodpeckers are extremely understudied. Field studies are critically needed to better understand this taxon and develop targeted conservation frameworks that will protect them along with the nest webs they support.

A101 Talk

Advances in tracking migratory birds in Asia

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Keywords: Asia, Migratory flyway, Migration route, Satellite tracking, Migratory connectivity

Migratory birds provide diverse ecosystem services and are a priority for biodiversity conservation; identifying their migration routes and migratory connectivity is crucial for effective conservation strategies. Here we, for the first time, synthesised Asian migratory-route tracking studies at a continental scale from 1991–2025, analysed 300 articles across Asian countries, and summarised advances in the development and application of multiple tracking technologies. The results indicated a steady expansion of migratory-bird tracking efforts in Asia over the past two decades, covering 160 species of migratory waterbirds, landbirds and seabirds; however, species coverage remains limited for some taxa, and target species show a clear taxonomic imbalance. As a core hub of global bird migration, Asia connects with Australasia, Africa, Europe and the Americas through an extensive and complex trans-hemispheric flyway network. This study expands the overall understanding of the migration ecology of Asian migratory birds. Future efforts should continue to advance the miniaturisation of tracking devices and the deep integration of multi-source technologies, while strengthening international collaboration and data sharing to convert tracking outcomes into a scientific basis for identifying potentially important habitats and formulating transnational conservation policies.

A102 Talk

Comparative transcriptomics reveals bird–virus co-evolution

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Keywords: Wild birds, Passeriformes, Transcriptome, Virus, Immune genes, Coevolution

The factors shaping viral evolution in natural ecosystems remain poorly understood, and the mechanisms linking viruses with host immune genes are still largely unexplored. Wild birds are a striking example, as they are rarely surveyed for viruses in the absence of overt disease. Here, we sampled multiple tissues from wild birds across an altitudinal gradient and used large-scale total RNA sequencing to analyse viral and immune-gene abundance together with sequence-based coevolution. Across six tissues from 75 wild bird species at different elevations, we identified 619 viruses and 1,024 immune genes. Both viral and immune-gene diversity and composition differed significantly among tissues and elevations. Comparisons between birds from the Qinghai–Tibet Plateau and the Sichuan Basin revealed shared patterns shaped by both internal and external environmental influences. In specific settings, we also detected potential coevolution between viruses and host immune genes. Statistical analyses identified possible coevolutionary associations between seven avian viruses and 223 host immune genes, and these pairs showed significant expression correlations across samples. These findings suggest coordinated virus–immune gene evolution across tissues and elevations in wild birds, and provide a basis for understanding virus–host evolutionary associations in natural populations.

A103 Talk

Ecological adaptation and genetic basis of tarsus length diversity in birds

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Keywords: Bird tarsus length, Single-cell transcriptomics, Evolution, Development, Ecological adaptation

Bird tarsus length exhibits remarkable diversity and complexity throughout avian evolution. However, the evolutionary patterns, developmental mechanisms, and ecological adaptations underlying this trait remain poorly understood. Here, we leveraged a phylogenetic tree encompassing over 10,000 bird species from the B10K project, integrating global avian trait and spatial distribution data from AVONET database, and combined these with single-cell transcriptomic profiles of chicken *Gallus gallus* and mallard *Anas platyrhynchos* embryos to systematically investigate the evolution and developmental basis of tarsus length. Our results reveal significant differences in tarsus length among birds inhabiting distinct habitats, and tarsus length is significantly associated with body mass, reproductive traits, and various ecological and geographic factors. Further, using machine learning approaches, we identified 1,376 genes correlated with tarsus length, which exhibit cell type- and stage-specific differential expression during avian embryogenesis. Overall, this study provides an

integrated framework for understanding the evolution, development, and ecological adaptation of tarsus length in birds, offering comprehensive data and theoretical insights into the mechanisms shaping key morphological traits.

A104 Talk

Kitesurfing and waterbirds: implications for managing recreational activities in tropical intertidal habitats

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Keywords: Disturbance ecology, Recreational impacts, Visitor management, Waterbird abundance, Central Asian Flyway, Mannar

Recreational kitesurfing is an emerging disturbance in coastal wetlands, yet its impacts on waterbirds in tropical non-breeding grounds remain poorly understood. We assessed its effect on waterbird abundance at a key intertidal area on Mannar Island, Sri Lanka, a critical flyway site. Monthly surveys conducted from 2018–2021 recorded waterbird abundance alongside kitesurfing activity and environmental covariates. Abundance was modelled using negative binomial Generalised Linear Mixed Models, incorporating kite numbers, tidal state, time of day, and season across two spatial scales. At the whole-wetland scale, abundance declined significantly with increasing kite numbers, with stronger negative effects during the migration season, when bird densities and energetic demands are highest. Tidal effects varied spatially, indicating redistribution across the wetland, while time of day showed no overall effect. At the high-density zone scale, disturbance effects were strongly time-dependent, with pronounced declines in the morning, weaker effects at mid-day, and no detectable effect in the evening, suggesting heightened sensitivity during peak foraging periods. Exploratory analyses indicated rapid short-term recovery following cessation of kitesurfing, with abundance returning to baseline within ~2 hours. These findings highlight the need for temporally and spatially targeted management of recreational activities to minimise disturbance to waterbirds in critical intertidal habitats.

A105 Talk

First insights into movement and connectivity of resident waterbirds within the island of Sri Lanka.

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Keywords: Cormorants, Spot-billed Pelicans, Urban wetlands, GPS tracking, Wetland connectivity, Movement ecology

The movement ecology of resident waterbirds in Sri Lanka is poorly understood beyond population count at key wetlands. This study characterizes internal movement patterns of three common resident species: Indian Cormorant *Phalacrocorax niger*, Little Cormorant *Microcarbo niger*, and Spot-billed Pelican *Pelecanus philippensis*. Between 2023 and 2026, 14 individuals were fitted with GPS transmitters in the Western Province. The tags generated 239,923 GPS locations, representing a cumulative movement distance of 140,726 km over an average of 304 days per individual. Tracking data was analyzed for daily displacement, spatial use, and wetland connectivity. Tracked birds showed strong use of coastal and urban wetlands around Colombo, combined with frequent inland movements across the Western province and beyond. Several individuals made longer-distance movements spanning multiple provinces, with maximum displacement distances reaching 255 km from the tagging site. These movements connected urban wetlands with protected areas in the south, large reservoirs in the north-central region, and coastal wetlands in the north-east. Mean daily movement distances ranged from 9.3 to 42.8 km, with a strong individual variation. These findings offer the first empirical evidence of island-wide movement patterns and wetland connectivity maintained by resident waterbirds in Sri Lanka, underscoring the importance of integrating movement ecology into national conservation planning.

A106 Talk

The impacts of wetland degradation and extreme drought on waterfowls at Poyang Lake, China

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Keywords: Waterbirds, Weather extreme, Wetland degradation, Geese, Bird response, Poyang Lake

Poyang Lake is a key wintering site for migratory waterbirds along the East Asian–Australasian Flyway. However, wetland degradation and increasing extreme climatic events pose growing threats to these populations. Here, we examined the effects of submerged

macrophyte degradation and an extreme drought event on geese and swans, the dominant waterbirds at Poyang Lake. We found that macrophyte degradation significantly altered the diet compositions of Swan Geese and Tundra Swans, which traditionally fed on Vallisneria tubers. The diet shifts increased dietary niche overlap and intensified interspecific competition with other goose species. Swan Geese and Tundra Swans responded by increasing pecking rates or/and time spent foraging. During the 2022 extreme drought, all the three common goose species broadened their diets to include lower-quality food resources. Swan Geese and Bean Geese maintained positive energy balance, reflected by increased abdominal profile index (API), whereas Greater White-fronted Geese showed a negative energy budget and declining API. Nevertheless, all three species had lower fat reserves during the drought than under normal hydrological conditions. These findings highlight the importance of behavioural plasticity and reveal species-specific vulnerability to environmental change, with implications for waterbird conservation under increasing climatic extremes.

A107 Talk

Challenges resulting from the ecological traits of the Endangered East Asian endemic Scaly-sided Merganser

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Keywords: Distribution, Scaly-sided Merganser, Model, Stable isotopes, Corticosterone

The Scaly-sided Merganser *Mergus squamatus* is a globally threatened duck species, classified as Endangered on the IUCN Red List since 2002. The majority (85%) of the population breeds in the Sikhote-Alin mountain range of the Russian Far East. Remaining individuals are found in the Changbai Mountains, straddling China's and the DPRK. Recent estimates suggest the global population smaller 3,000 birds. The most suitable breeding habitat comprises broad-leaved deciduous forest. The northern and western limits of its breeding range are dictated by the distribution of broad-leaved trees. Habitat loss due to deforestation in north-east China further constrains the breeding range from the south. Using feather samples from known moult sites our results indicate that δ^2H analysis may be a useful tool for distinguishing between female Scaly-sided Mergansers that moulted on different river catchments, as well as for differentiating between marine, freshwater, and brackish habitats used by both sexes. A small proportion of Scaly-sided Mergansers were found to utilise marine environments for moulting. Analyses of feather corticosterone confirmed that occupancy of marine environments, and the consequent consumption of saltwater, is associated with increased individual stress levels.

A108 Poster

Nesting traits of East Asian Arctic-breeding shorebirds in response to climate variability

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Keywords: Shorebirds, Nesting traits, Climate variability, Western Chukotka

Shorebirds are a group of birds characterized by high diversity in reproductive strategies. Climate variability in the Arctic poses significant challenges for breeding shorebirds, which must optimize nesting phenology, reproductive effort and nest density under increasingly unpredictable environmental conditions. Our study examines clutch initiation date, clutch size, clutch volume and nest density dynamics in Arctic-breeding shorebirds on Western Chukotka, Russia, based on field data collected from 2011 to 2025. Over this 15-year period, we monitored multiple species, including Dunlin *Calidris alpina*, Pectoral Sandpiper *C. melanotos*, Ruff *C. pugnax*, Temmink's Stint *C. temminckii* and Red-necked Phalarope *Phalaropus lobatus*, to assess how interannual climate fluctuations, particularly spring and summer temperature and snowmelt timing, influence these reproductive and phenological parameters.

A109 Talk

Eating more and fighting less: social foraging is a potential advantage for successful invasion of Light-vented Bulbul

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Keywords: Distribution change, *Pycnonotus sinensis*, Social foraging, Expansion advantage, Source population, Competition

Animals can expand distributions in response to climatic and environmental changes, but the potential expansive ability of a source population is rarely evaluated using designed experiments. Group foraging can increase survival in new environments, but it also increases intraspecific competition. The trade-off between benefit and conflict needs to be determined. The expanding Light-vented Bulbul *Pycnonotus sinensis* was used as a model to test mechanisms promoting successful expansion. Social foraging and its advantages were evaluated using lab-designed feeding trials. Consuming novel foods was compared between bulbuls and a sympatric, nonexpansive relative species, the finchbill *Spizixos semitorques*, from native areas at both solitary and social levels. Bulbuls increased their eating times when transferred from solitary to group, whereas social context did not affect finchbills. Bulbuls were significantly more likely to eat with their companions than finchbills when in a group. Thus, exploring food resources in a bulbul source population was facilitated by social context, indicating that social foraging is an important means by which birds successfully expand and respond to environmental changes. This research increases understanding of successful expansion mechanisms and will consequently help predict invasive potentials of alien species.

A110 Poster

Asymmetry in responsiveness to playback of geographic song variation after a recent range expansion in Light-vented Bulbuls

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Keywords: Behavioral barrier, *Pycnonotus sinensis*, Birdsong dialects, Phylogeography, Playback experiment, Speciation

Birdsong variation among populations within species has been regarded as a possible precursor for variation between species and may play a role in speciation. However, acoustic variation between populations of the same or different species can have a variable impact on mutual responsiveness, and we currently lack sufficient insight into the underlying reasons. We report here on geographic song variation and responsiveness to playback for the Light-vented Bulbul *Pycnonotus sinensis*, a species with recent range expansion in China. We recorded and tested responsiveness in two southern and two northern locations to songs from southern and northern birds. We used recordings for playback from local, near-by, and far-away dialects from within their own distribution range. Birds in the south showed very little response to almost all non-local songs. In contrast, birds in the north showed a strong response to a wide-range of stimuli, just gradually fading from local, near-by, to far-away northern dialects, which may be related to song type sharing or individual mobility and aggression associated with the recent range expansion. We hereby add an asymmetric response pattern in responsiveness to the literature and review the current insights about the potential impact of song variation on avian speciation.

A112 Talk

A. R. Wallace's Complete Collection of Birds from the Malay Archipelago

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Keywords: History of science, A. R. Wallace, Collections

Ornithologists interested in this part of the world will know the great naturalist Alfred Russel Wallace (1823–1913). After his eight years in the Malay Archipelago, he reckoned his vast collection included 8,050 specimens of 'about a thousand species' of birds. What perhaps no ornithologists are aware of, however, is that Wallace's story was drastically altered by cranks and conspiracy theorists in the 1960s–1980s into the story known today- an underprivileged genius on a quest for the mechanism of evolution who conceived of 'the same theory' as Charles Darwin but lost out in the priority or fame that should have resulted. The unfortunate victim-hero Wallace is in fact a modern myth as are a host of related factoids. For example, he is constantly referred to nowadays as 'the founder of biogeography' when, in fact, Wallace lived long after this field had developed. This talk will also reveal the true extent of Wallace's bird collection- which included more than 1,000 species- based on 9,818 published and unpublished records of many kinds.

A113 Talk

Mate choice cues in long-lived monogamous Oriental Storks

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Keywords: Dispersal pattern, Age-assortative mating, Inbreeding avoidance, Biased encounter probability

Mate choice in long-lived birds with strong mate fidelity influences individual fitness and is of considerable interest to behavioral ecologists. Assortative mating and inbreeding avoidance are common mating mechanisms, but the constrained spatial distributions of such birds make the direct interpretation of observed mating preferences challenging. Study designs that account for the biased encounter probabilities of potential mates are required to elucidate active mate choice. Here, we investigated mate choice in a reintroduced population of Oriental Stork *Ciconia boyciana*, accounting for the likelihood that individuals with nearby natal or release sites are more likely to encounter and pair with one another. We found that biased encounter probabilities of potential mates resulting from releases influenced pairing patterns, and mating with small age differences was detected even after accounting for this spatial bias. Our results indicate that setting up release sites at greater distances from each other and releasing more males aged 3–8 years would be effective strategies in the conservation management of this species.

A114 Talk

Impact of researcher presence towards Eastern Barn Owls *Tyto javanica javanica* breeding in artificial nest-boxes

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Keywords: Raptor, Human disturbance, Breeding success, Behaviour, Avian predation

Barn Owls are widely utilized as biological control agents and artificial nest-boxes are typically installed to encourage Barn Owl presence in agricultural areas. This study was carried out to investigate the impact of researcher presence at nest-boxes towards the behavior of Barn Owls *Tyto javanica javanica*. The study was conducted over a three-year study period in oil palm plantations in Malaysia. We investigated the immediate response of owls, namely escaping distance, when flushed from nest-boxes, and when possible, the time owls took to return to nest-boxes. We also studied the impact of time away from the nest-box on hatching and brooding success. We recorded 532 observations throughout the study period. Breeding females initially travelled shorter distances from the nest-box though after a few minutes, owls flew further away. Non-breeding owls that flushed from nest-boxes returned after sunset, while breeding females showed high individual variability in return

times. Longer female return times were correlated with lower hatching success and we recorded several cases of avian predation on eggs and young when females returned at sunset. This study shows that care needs to be taken when monitoring nest-boxes, especially during the incubating and brooding stage.

A115 Talk

Eastern Barn Owls *Tyto javanica javanica* and sustainable pest management of rat pests in agricultural lands in Malaysia

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Keywords: Biological control, Raptor, Oil palm, Rice fields

Barn Owls are the one of the most widely utilized biological control agents against rodent pests; in Malaysia, the Barn Owl subspecies *Tyto javanica javanica* has been utilized to control rat pests since the 1960s. Today it is a relatively common sight in oil palm plantations and rice fields in Peninsular Malaysia. Working with the community is a key factor in ensuring the success of biological control programs. To highlight the effectiveness of community-based approaches, the Barn Owl and Rodent Research Group (BORG) spearheaded the Barn Owl for Oil Palm Smallholders Initiative (BOSI) with the Malaysian Palm Oil Green Conservation Foundation (MPOGCF) to promote sustainable rat management among smallholder oil palm operators. BORG also worked on a similar community-based project in rice fields to foster more sustainable practices among B40 rice farmers. Community-based approaches can dispel negative attitudes of people towards Barn Owls as well as increase confidence of farmers to reduce application of rodenticides and rely on Barn Owls to control rat pests. This can lead to a holistic approach to rat pest eradication programs that can reduce the application of harmful rodenticides and the harm these chemicals pose to the environment and non-target animals.

A116 Talk

Ecomorphological approaches to reconstructing the biology of extinct birds

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Keywords: Ecomorphology, Fossil birds, Lifestyle reconstruction, Comparative anatomy, Haast's Eagle, Confuciusornithiformes

Ecomorphological reconstructions can bridge deep phylogenetic and temporal gaps when exceptional fossils preserve functionally informative osteological correlates. Here, I synthesize two case studies that apply comparative anatomy, myology, syndesmology, horn structures, and taphonomy to infer the biology of extinct birds: Early Cretaceous Asian confuciusornithiforms from the Jehol Biota and New Zealand's late Holocene Haast's Eagle. In confuciusornithiforms, a strong but sensitive beak, pointed wings, manual claws, pedal

proportions, and depositional context support a lifestyle centered on aerial surface-feeding over freshwater bodies, tree-based resting and probable nesting, limited terrestrial competence, and display functions for elongated rectrices. In Haast's Eagle, reconstructed hindlimb musculature and ligament architecture indicate a talon-dominated predator specialized for securing, subduing, and dismembering unusually large prey; enlarged femoral retractors, pronators, digital abductors, and flexor attachment sites are consistent with predation on avian megafauna rather than obligate scavenging. Together, these cases show that ecomorphology provides a rigorous framework for inferring locomotion, foraging, habitat use, and extinction vulnerability in fossil birds across radically different evolutionary settings.

A118 Talk

Common bird responses to the severity of managed burns in the dry forests of Victoria, Australia

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Keywords: Burn severity, Drought, White-throated Treecreeper, Fire, BACI, GLMM

This presentation reviews published work, examining bird responses to fire severity. In Australia, managed (prescribed) burns are used to reduce wildfire risk and help maintain biodiversity, yet ecological responses vary with fire severity. We investigated bird responses to autumn burns in dry forests of Victoria, Australia. Burns differed in fire severity (defined as the degree of impact on ecological resources). Severity was quantified using canopy scorch, bark burn and ground layer burn, producing site scores ranging from low (2.5) to high (10). A BACI design (before-after, control-impact) assessed changes in bird assemblages, comparing pre-fire surveys with spring/summer observations over two years post fire. Generalised linear mixed models showed that overall bird abundance returned to pre-burn levels by the second spring post fire, with minimal change in species richness or turnover. Of 10 focal species examined, only the White-throated Treecreeper *Cormobates leucophaea* responded to both fire and severity. This species of treecreeper uses tree hollows for both roosting and nesting.. Results showed a drop in its occurrence in the second spring after fire, at severely burnt sites. These results indicate that forest birds are mostly resilient to small-scale managed burns, although broader declines in abundance were associated with concurrent regional drought conditions.

A121 Talk

Phylogeography of Great Hornbill *Buceros bicornis*

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Keywords: Bucerotidae, Genomics, Population divergence, Paleoclimate, Disjunct distribution, Conservation genetics

The Pleistocene epoch was marked by repeated cycles of wet-dry climate that influenced lineage diversification. In Asia, mountain uplift and island formation during the Pliocene were followed by Pleistocene climatic oscillations, promoting lineage diversification in birds, consistent with the 'Pleistocene pump' hypothesis. Biogeographic barriers such as the Isthmus of Kra, River Brahmaputra, and Palghat Gap have contributed to population divergence across taxa, including birds. The Great Hornbill *Buceros bicornis*, a forest-dependent species, has a disjunct distribution across the Western Ghats, Himalaya, and Southeast Asia. This study investigates the role of geography and paleoclimate on its phylogeographic patterns and population divergence using mitochondrial and genomic data. Phylogenetic analysis of 28 mitogenomes (11,049 bp; 13 PCGs) and 8 genomes (4.2 million SNPs) revealed two major clades: Western Ghats and Indo-Burma. STRUCTURE and PCA analyses supported this division, indicating permeability of biogeographic barriers for the Great Hornbill. The historical demographic scenario of Indo-Burma being the ancestral population was supported by the Approximate Bayesian Computation method. Divergence estimates from hPSMC (220–100 kya; using genomes) and StarBEAST (900–400 kya; using mitogenomes) place separation in the mid–late Pleistocene, plausibly due to contraction of wet forests that isolated WGs populations from a large, continuous Indo-Burma population.

A122 Poster

East Asian Little Terns' migration patterns vary depending on their breeding sites

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Keywords: Little Tern, Migration, Geolocator, Japan, Wintering sites, Breeding sites

The Little Tern is listed as Endangered (Category IB) on the Red List of the Ministry of the Environment, Japan. As a migratory species, its conservation requires protecting not only breeding grounds but also wintering and stopover sites. Tracking studies using geolocators have shown that individuals breeding in eastern Japan winter in the Philippines, Micronesia, and eastern Australia. Additionally, individuals breeding in Taiwan have been reported to winter in northwestern Australia (Le-Ning, pers. comm.). In this study, we investigated the wintering sites of individuals breeding in Okinawa, which is located geographically between Honshu and Taiwan. The results confirmed that the Okinawa population winters in northern and eastern Australia—a region intermediate between the wintering grounds of Honshu and Taiwan populations. This suggests a longitudinal shift in the wintering sites of Little Terns breeding across East Asia.

A125 Talk

Spatio-temporal niche partitioning and home range dynamics of sympatric owl species in Melghat Tiger Reserve, India

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Keywords: AKDE, Home Range, India, Niche-partitioning, Owl assemblage, Spatial-temporal overlap

Understanding spatial movement patterns of owls is critical for revealing how ecologically similar nocturnal raptors coexist in tropical landscapes. Such insights are essential for addressing conservation and habitat management strategies in rapidly changing forest ecosystems. Our study investigates spatio-temporal resource use and coexistence among six sympatric owl species in Melghat Tiger Reserve, from Central India. We radio-tagged 16 individuals of the following species: Rock Eagle-Owl (3), Brown Fish-Owl (2), Barn Owl (2), Mottled Wood-Owl (4), Spotted Owlet (3), and Jungle Owlet (2). Using radio-telemetry, we estimated home ranges through Minimum Convex Polygon (MCP) and Autocorrelated Kernel Density Estimation (AKDE), and quantified spatial overlap using the Bhattacharyya coefficient. Home range size varied markedly across species, with large owls such as the Barn Owl exhibiting extensive ranges (up to 18.59 km²), while smaller species like the Jungle Owlet showed restricted ranges (0.067–0.13 km²). Interspecific overlap patterns revealed both strong overlap, such as between Rock Eagle-Owl and Brown Fish-Owl (0.86), and clear spatial segregation in other species pairs. Mottled Wood-Owls showed substantial overlap within pairs (up to 0.88), indicating shared space use. These findings suggest that a combination of spatial partitioning and partial overlap enables coexistence among ecologically similar nocturnal raptors.

A127 Talk

Migration and breeding surveys of endangered cranes in North-eastern Mongolia

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Keywords: Cranes, Satellite tracking, Breeding population, Habitat use, Conservation gap, Eastern Mongolia

Eastern Mongolia represents a key breeding and summering place for six species of cranes. Since 2019, we have conducted integrated field surveys to assess breeding populations and migration ecology of the cranes in Eastern Mongolia. Breeding surveys were conducted using point transect methodology along the Ulz and Kherlen Rivers. Long-term monitoring results indicate notable interannual variation in breeding pair numbers, particularly for the White-naped Crane, which appears closely associated with precipitation patterns. Lower breeding pair counts were observed during drought years, while the population increased in

rainy years. Migration studies based on satellite tracking data from 133 individuals across five crane species (White-naped Crane n=90, Demoiselle Crane n=29, Common Crane n=12, Siberian Crane n=1, Hooded Crane n=1) reveal pronounced interspecific differences in migration strategies and habitat use. Breeding surveys further indicate a decline in the breeding population of Demoiselle Cranes, while the number of summering Siberian and Hooded Cranes has increased in recent years. By integrating breeding and tracking data, we identify key areas; however, many of these areas remain outside existing protected areas, highlighting significant conservation gaps. Our findings emphasize the importance of combining population monitoring with movement ecology to inform adaptive, climate-responsive conservation strategies for cranes.

A128 Talk

River hydrology drives flexible post-breeding habitat use in Lesser White-fronted Geese

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Keywords: GPS tracking, Migration, Moult, Staging sites, Hydrology, *Anser erythropus*

We studied post-breeding habitat use of the Eastern Lesser White-fronted Goose using GPS tracking of 15 individuals in 2022–2025. We quantified space use and movement patterns across three summer phases: breeding, flightless moult, and pre-migratory staging. During breeding and moult, geese showed high site fidelity, small home ranges and limited movements. After fledging, movement distances increased markedly, and birds expanded their home ranges, indicating a shift in spatial behaviour. During pre-migratory staging, geese used a network of sites rather than a single fixed area. Site use varied strongly among years and was influenced by river water levels. High water levels reduced use of southern staging areas and increased the probability of birds moving to more northern sites, where stopover duration was longer and space use more restricted. These findings demonstrate that habitat use in this population is flexible and shaped by hydrological conditions. We conclude that conservation efforts should prioritise the protection of a network of floodplain habitats rather than individual sites, as different areas become critical under different environmental conditions.

A129 Talk

Scale-dependent scale on bird collision: insights from China's largest citizen science initiative

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Keywords: Bird building collision, Scale effect, Urban biodiversity, Citizen science

Bird–building collisions are a major human-caused threat to avian biodiversity amid rising urbanization. In 2022, Duke Kunshan University and conservation NGOs launched China's Anti-Bird Collision Action Alliance, initiating a large citizen science project. To date, 7,449 volunteers across 208 cities have participated in surveys and collision-prevention renovations, collecting 259,446 records and documenting 1,842 collisions. Analyzing 2021–2023 data from 3,078 buildings, we found that migratory, non-predatory birds with lower body mass were more frequent casualties. Artificial light at night (ALAN) showed only marginal effect, positive in fall and negative in spring, with stronger influence within 100 m of buildings. Vegetation cover around buildings increased collisions, especially at larger scales (1–10 km). Shorter buildings with higher glass coverage were more collision prone. Contrary to previous studies, trees within five meters of buildings reduced collisions, particularly in fall. These findings can inform context-sensitive urban planning and conservation in China. Long-term collision monitoring, powered by citizen science, and robust estimates of bird abundance are urgently needed to devise targeted interventions.

A130 Talk

Climate-driven northward range shift and new migratory pathway of the Asian Dowitcher in Eastern Siberia

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Keywords: Climate change, Migration, Range shift, Satellite tracking, Asian Dowitcher, East Asian–Australasian Flyway

Climate change is reshaping bird distributions and migration systems, yet empirical data on newly established populations remain limited. We investigated the migratory movements of a recently established population of Asian Dowitcher breeding in taiga wetlands of Eastern Siberia. Using satellite telemetry, six individuals were tracked during autumn migration to determine routes, stopover sites, and wintering areas, and to infer their population origin.

Migration covered 6,400–8,154 km over 35–55 days, beginning in early to mid-July. Birds followed a narrow southward corridor, with key stopovers at Lake Dalai and the Yellow and Bohai Seas, where they remained for up to one month before dispersing to wintering grounds across Southeast Asia and Indonesia. Migration routes closely matched those of the China–Mongolian population, suggesting this as the most likely source of colonists. The establishment of this population approximately 1,500 km north of the historical breeding range coincides with increasing aridity in inner East Asia. Despite longer migration distances, individuals maintained successful breeding and migration performance, indicating favourable conditions in the new habitat. These findings demonstrate rapid adaptive responses and the emergence of a novel migratory flyway under ongoing climate change.

A131 Talk

Temporal dynamic of host-range expansion in wild bird communities

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Keywords: Avian haemosporidian, Climate change, Host-range expansion, Migration, Temporal dynamic

Rapid climate change altered distribution of many bird species, enabling plenty opportunities for parasites to expand their host range when brought to new regions. Understanding the process of host-range expansion and its driving factors, is important for studying disease evolution, yet few studies have focused on long-term dynamic of host-parasite associations. In this study, we monitored the temporal dynamic of associations between haemosporidian parasites and their avian hosts in a wild community in Western Beijing during the past 15 years, aiming at illustrate the host-range expansion processes and their influencing factors, including host phylogeny, diversity, migration status and climatic change. Among 189 identified lineages, five showed marked host-range expansion, with rates from 1.0 to 2.7 species/year. All successfully expanded lineages either initially infected resident birds or shifted from migratory to resident birds, whereas those relied on continuous migratory input disappeared, indicating that stable transmission in resident birds is essential for persistence. High host abundance facilitates expansion, with common birds acting as hub species for transmission. Besides, autumn precipitation is a key factor for expansion, possibly through effects on migratory behaviour and vector activity. Our study provides empirical evidence for mechanisms of host-range expansion and informs wildlife disease surveillance under climate change.

A132 Talk

Distribution and population status of the globally endangered Giant Nuthatch *Sitta magna* in Myanmar

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Keywords: Abundance estimation, N-mixture models, Detection probability, Endangered Species management, Bayesian framework, *Sitta magna*

Multiple tropical-subtropical species are endangered due to habitat loss but lack landscape and site-level data to estimate distributions and abundances. The endangered Giant Nuthatch *Sitta magna*, is likely restricted to mature, montane forests of eastern Myanmar, southwestern China and northern Thailand. Although Myanmar covers ~30% of its global range, habitat and abundance data are lacking. We surveyed Giant Nuthatch in eight sites in Myanmar between 2019 and 2025 to understand its landscape-level distribution and to provide abundance estimates. We surveyed 178 points and used playback to maximize detections. Giant Nuthatch was found in three sites, all outside the protected area system. N-mixture models were generated in a Bayesian framework to assess factors contributing to its abundance and detection probability. Estimated densities among the confirmed sites ranged from 2.56 to 3.59 individuals/km² (9–29 individuals/site), while the detection probability was 0.42 (95% CrI 0.35 - 0.50). Both densities and detection probabilities were similar to recent estimates from Thailand. Giant Nuthatch abundance was positively associated with the amount of pine cover and abundance of large-diameter trees. Probably few Giant Nuthatch sites remain in Myanmar and these three sites are in critical need of conservation and could be locally extirpated shortly if habitat loss is not reversed.

A133 Talk

Trends in the number of passerine birds in Kamchatka, Russian Far East, over the past 50 years

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Keywords: Russia, Kamchatka, Passerine birds, Trends of number change

Our research on Kamchatka birds has been conducted for over 50 years. The authors worked independently, but used same counting method. Total counting route exceeded 8,000 km during the breeding season and 12,000 km in winter. The amount of collected data allowed to estimate with a high degree of certainty the changes in the number of passerine birds that have occurred in Kamchatka over the past 50 years. We divided the birds into four groups. The first group includes species with relatively stable numbers over the study period: skylark, all species of wagtails, pipits, flycatchers, and some others. The second group includes species whose numbers do not have notable trend, but fluctuate significantly from year to year: all species of tits, Common Rosefinch, and Eyebrowed Thrush. The third group includes species with a noticeable negative trend in population change: Rustic Bunting, Yellow-breasted Bunting, Rosy Finch, and Oriental Crow. The positive trend in population change is observed for Arctic Warbler, Dusky Warbler, Rufous-tailed Robin, Brambling,

Hawfinch, Grey Bunting, Pallas' Reed Bunting. In addition, we have also observed an increase in the range of most of these species.

A134 Poster

Pycnonotus sinensis and *P. taivanus* maintain species boundaries despite gene flow

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Keywords: Intra-island speciation, Climatic niche divergence, Plumage differentiation, Asymmetrical introgression, Species boundaries, *Pycnonotus*

In the absence of physical barriers, it is challenging to explain how species boundaries arise and persist within a single island. While environmental heterogeneity may promote local adaptation and initiate divergence, continued differentiation requires mechanisms to reduce or counterbalance gene flow between diverging lineages. Despite continued hybridization, the endemic Formosan Bulbul *Pycnonotus taivanus* and the widespread Light-vented Bulbul *P. sinensis* occupy distinct climatic environments in Taiwan. *P. taivanus* is associated with warmer, more humid conditions, while *P. sinensis* occurs in habitats with broader temperature variation. Further plumage analyses revealed significant differences in head patterns, which are primary diagnostic traits for distinguishing the two taxa. However, many putative hybrids resemble *P. taivanus* in head plumage, suggesting that introgression may be difficult to detect from phenotype alone. Thus, although head plumage remains informative for distinguishing parental taxa, its reliability for identifying admixed individuals is reduced within the contact zone. Ongoing genomic analyses are testing whether candidate barrier loci contribute to the maintenance of divergence despite gene flow. Together, these findings suggest that ecological differentiation and incomplete reproductive isolation can maintain species boundaries within a geographically continuous island system.

A135 Poster

Study of northward migration of waterbirds and shorebirds on Kamchatka, Russia

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Keywords: Russia, Kamchatka, Migration, Counting, Waterbird, Shorebird

The study of northward migration of waterbirds and shorebirds in different parts of Kamchatka has been carried out for 50 years. The main method is the multi-day observations of birds flying past near stationary observation point. In 1975–1990, only Anatidae were recorded by observers, hunting officers and hunters were involved in the works. For the past 35 years, the works were conducted out only by professional ornithologists, all waterbird and shorebird species were recorded. Now we have 90 such works from 43 different locations in Kamchatka region. For one season in one point, we counted up to 1,200,000 flying pasts to

north waterbirds and shorebirds, including up to 850,000 Anatidae, 166,000 waders, 134,000 auks, 103,000 gulls, 54,000 divers, 35,000 cormorants. The data obtained allowed us to estimate the numbers of most species of waterbirds and shorebirds that arrive in the spring on the Kamchatka Peninsula and migrate to north. We have identified important staging wetlands where birds concentrate during migration. This has enabled us to establish protected areas in the most critical wetlands for birds' conservation. We have also developed ways for monitoring the number of migratory species. To do this, we have identified the most important observation points.

A136 Poster

Genetic assessment of Wreathed Hornbills *Rhyticeros undulatus* at Khao Yai National Park, Thailand

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Keywords: Wreathed Hornbill, Genetic diversity, Wild population, Non-invasive sampling

Genetic variation is important for population viability, influencing adaptive potential and long-term population persistence. The Wreathed Hornbill *Rhyticeros undulatus*, currently classified as Vulnerable by the IUCN, is a keystone frugivore in Asian tropical forests. With their large home range, they facilitate long-distance dispersal of large-seeded plants and thereby play a critical role in forest regeneration. However, the genetic status of wild populations in Thailand remains insufficiently studied. In this study, we assessed genetic diversity in the Wreathed Hornbill from Khao Yai National Park using non-invasive sampling of naturally shed feathers and feces from 25 individuals. Analyses of mitochondrial COI and CytB markers revealed moderate to high genetic diversity, suggesting ecological resilience and a relatively large population size. Negative values of Fu's Fs and Tajima's D implied population expansion. However, the absence of a star-like haplotype pattern suggests that this expansion may not be recent. We recommend continued population and genetic monitoring, as the species is sensitive to resource availability, particularly fruit abundance and the presence of suitable pre-existing tree cavities for nesting.

A137 Talk

Genomic evidence of introgression and hybrid speciation in an island radiation of *Zosterops* White-eyes.

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Keywords: *Zosterops*, Whole-genome, Introgression, Hybrid speciation, Admixture

White-eyes (genus *Zosterops*), famously dubbed 'great speciators', are an island radiation of over 120 species known for rapid diversification while retaining highly similar phenotypic traits. However, the processes driving this diversification remain poorly understood. Using whole-genome data of five white-eye species from the eastern Indonesian Archipelago, we tested whether genetic introgression has contributed to their diversification. We found that traditional species boundaries did not consistently reflect genetic relationships and that signals of introgression were widespread but varied across islands within the same species. We also identified evidence for a putative hybrid species, the Flores White-eye *Zosterops unicus*, which appeared to have evolved from a mix of genomic contributions from two parental species, the Lemon-bellied White-eye *Zosterops chloris* and Ashy-bellied White-eye *Zosterops citrinella*. Despite this origin, *Z. unicus* currently co-occurs with *Z. chloris* without evidence of ongoing hybridisation, suggesting these speciation processes likely being complete and that reproductive isolation has been established. Our findings suggest introgression may accelerate diversification rates in certain lineages by generating novel genetic combinations that contribute to species formation.

A138 Talk

Predicting bird-mediated seed dispersal in a fragmented forest landscape

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Keywords: Forest regeneration, Animal movement, Seed dispersal distances, Zoochory, Plant-animal interactions, Frugivory

Birds are one of the most important seed dispersers of trees in tropical forests. However, forest loss and fragmentation due to anthropogenic land-use changes are affecting bird communities and movement, thereby altering their seed dispersal services. To estimate the

importance of birds in forest regeneration, we created a spatially explicit individual-based model (IBM) that simulates bird-mediated seed dispersal in a fragmented forest landscape. We used movement data of a Spotted Imperial Pigeon (Ducula carola), one of the largest frugivores in our study site in Northeast Luzon, Philippines, and captive feeding experiments to inform our movement model and seed retention times, respectively. Our seed dispersal IBM predicted that pigeons contribute to frequent short distance and occasional long distance seed dispersal, able to move between forest patches. Simulating the removal of fruiting trees in the agricultural matrix led to a decreased number of seeds dispersed, less trees visited, and a smaller area covered by seed dispersal. Hence, remnant trees should be preserved as they have the potential to promote natural forest regeneration. This IBM serves as a versatile tool for researchers and decision-makers, contributing evidence for scaling decision-making on the wider adoption of trees in rural landscapes.

A139 Talk

Genomic signatures of mitonuclear coevolution in *Poephila* finches

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Keywords: mitonuclear, speciation, *Poephila*, Australia

In complex organisms, the production of cellular energy (in the form of ATP) depends on the coadaptation between mitochondrial and nuclear gene products – referred to as mitonuclear compatibility. Incompatibilities between these coevolving genomes have been proposed to contribute to population divergence and maintenance of species boundaries, highlighting the importance of mitonuclear coevolution. In this study, we used *Poephila* finches as a model system, specifically two long-tailed finch subspecies. These finches are known for their recent divergence across northern Australia and are differentiated primarily by bill colour – red and yellow. By analysing ω ratios, a metric of evolutionary rate, we assessed signals of selective pressures associated with compensatory coevolution across mitochondrial genes (mtDNA), nuclear-encoded genes that interacts with the mitochondrion (N-mt DNA) and other nuclear genes (nDNA). Specifically, we performed four comparisons and found significant results in three: (1) mtDNA versus N-mt DNA (P_{MWU} = 0.0197); (2) mitochondrial versus cytosolic counterparts within ribosomal protein genes (P_{MWU} < 2.2×10^{-16}); (3) N-mt DNA versus nDNA (PMWU = 5.402×10^{-9}) and (4) oxidative phosphorylation complexes I, III, IV and V versus complex II (P_{MWU} = 0.5208, 0.1052, 0.7491, 0.6919 respectively). Our findings suggested that rapid mitochondrial evolution has driven compensatory changes in interacting nuclear genes among conspecific populations of *Poephila*. These adaptive changes likely reflected population-specific responses to rapidly evolving mtDNA and could have contributed to early stages of reproductive isolation.

A140 Poster

Avifaunal community composition and beta diversity across a restoration gradient within a tropical biological corridor in Sri Lanka

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Keywords: Restoration ecology, Biological corridors, Biological corridors, Species turnover, Tropical landscapes, Beta diversity

Biological corridors enhance connectivity in fragmented tropical forests, yet avifaunal responses to land-use gradients in restored landscapes remain understudied in Sri Lanka, particularly within the Endane Biodiversity Corridor (EBC), linking the Iharakanda proposed forest reserve and the Walankanda Forest Reserve (WFR) within Sinharaja Forest Landscape. This study examined the avifaunal composition and beta diversity across three land-use types associated with EBC: Restored area (RA), productive tea plantation (PT) and natural forest (WFR). Field surveys were conducted over eight months using 21 line transects (100 m), with visual and auditory detections during peak activity. Community dissimilarity was assessed using Bray–Curtis indices and visualized with Non-Metric Multidimensional Scaling (NMDS). Differences were tested using Permutational Multivariate Analysis of Variance (PERMANOVA), and beta diversity partitioned into turnover and nestedness components. Communities differed among land-use types (PERMANOVA: $F=9.40$, $p = 0.001$). Bray–Curtis dissimilarity was highest between PT and WFR, while RA was intermediate. NMDS (stress=0.0708) revealed that RA supported transitional communities between forest and plantation systems. Beta diversity was dominated by species turnover (>83%), indicating active replacement rather than nestedness. These findings highlight the ecological value of restoration for maintaining avian diversity in Sri Lanka's human-modified tropical landscapes.

A141 Talk

Understanding local communication patterns to raise awareness about parrots conservation in Maluku

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Keywords: Awareness, Communication, Conservation, Illegal-wildlife-trade, Parrots

Parrots are one of the most popular birds on wildlife trade but there are limited communication on them in wildlife regulations. This research focuses on understanding the local communication patterns that can be applied to increase awareness among stakeholders and local communities for decrease the illegal parrot trade in Maluku (Ambon and Seram). The research was conducted between January 2024 – December 2025, with mixed methods of qualitative and quantitates data of Penta helix approach obtained from 1,842 informants and 1,012 respondents. The multivariate regression test indicated no multicollinearity among the number of confiscated birds with threat and endemic status (0.818, VIF=1.223). NVivo Analysis result reflected conservation strategic successes achieved by combination of evidence-based programs, intensive communication, sustainable programs and various holistic approaches. The correlation coefficient spearman test showed that there was strong significant correlation (0.973) between variables for raising awareness and communication patterns approaches. A conservation strategic plan by Miradi software was involving local communities of Huaulu, to agreed and preserve the cockatoo feather headwear and donated six crowns. This research revealed communication patterns and built conservation strategies that can significantly contribute to successful reduction of the illegal parrot trade in Maluku.

A142 Talk

Island colonisation and speciation in the Otus sunia complex across the Andaman and Nicobar Islands

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Keywords: Peripatric speciation, Island biogeography, Owls, Genomics, Bioacoustics, Taxonomy

Tropical archipelagos offer ideal systems for studying speciation, yet how island populations became established remains poorly understood in the Andaman and Nicobar archipelago. We investigated the evolutionary history of the *Otus sunia* complex across Asia, with a focus on the Andaman and Nicobar Islands, by integrating genome-wide data, vocal traits and plumage variation. Our results suggest that the colonisation of the archipelago was not a single event, and that island populations differ in their origins and in the timing and sequence of their colonisation. Phenotypic divergence among some island populations is pronounced and consistent with rapid differentiation following colonisation. Across mainland Asia, we also found marked genomic and vocal differentiation between populations with different migratory behaviours, suggesting long-term evolutionary separation. Together, these findings point to a more complex colonisation history than a single radiation from one founding event, and highlight the value of integrating genomic and phenotypic data to resolve cryptic diversity. Island systems in tropical Asia may continue to harbour unrecognised bird diversity, with taxonomic and conservation implications.

A143 Talk

The Cooperative-Breeding Database (Co-BreeD): revisiting the effects of alloparental care, latitude and elevation on clutch size

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Keywords: Cooperative breeding, Cooperation, Clutch size, Reproduction, Alloparental care, Comparative research

Scholars long sought to understand why, in cooperatively breeding birds and mammals, individuals provide parental care for the offspring of other group members. Nonetheless, comparative research on this question is hindered by a lack of data for most species (especially from wide parts of Asia). The Cooperative-Breeding Database (Co-BreeD: https://zenodo.org/records/14697198) addresses this obstacle as a growing, open-access, and standardised framework for comparative research on alloparental care across birds and mammals. Co-BreeD currently includes population-specific estimates on the prevalence of alloparenting, allonursing and clutch/litter size from over 530 populations of 460 species. In this talk, I will present the unique capabilities of this database and demonstrate how they are being used to revisit and reveal biological patterns. I will specifically revisit the claims for a positive association between latitude and clutch size, and for a negative effect of cooperative breeding and elevation on clutch size. Importantly, attendees who could submit quantitative parental care data from a wild population of any bird or mammal species (preferably from Asia) would be invited to join as co-authors to the upcoming Co-BreeD manuscript.

A144 Talk

Changes in distribution and abundance of the Spoon-billed Sandpiper in Russia

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Keywords: Spoon-billed Sandpiper, Distribution, Abundance, Chukotka, Kamchatka, Breeding population

The global population of the Spoon-billed Sandpiper has decreased by 90% over the past 50 years, and now is estimated at about 400 adult individuals. All previously known local breeding populations of the species at southeastern Chukotka have shown declines. At the area of ca.100 km² in the Meinypilgyno Village vicinity, the local population declined from ca. 45 breeding pairs in 2001 to 27 adults in 2025 (10 breeding pairs and 7 solitary males). At Okeanskoye site the decline was from 17–18 pairs in 2015–2016 to 13–16 individuals in 2023 and 2024. In the vicinity of Khatyrka Village instead of 8–10 breeding pairs in 1976 only one pair was found in 2017. At the northern coast of Chukotka the local population on Belyaka Spit extincted during the period of 30 years, declining from 36–38 pairs in 1986–1988 to one pair in

2010 and complete disappearance in 2017. In 2025, three breeding pairs were found on a mountain plateau of northern Kamchatka, 60 km from the Bering Sea shore, at altitudes of 350–420 m ASL in an area of 25 km². Formerly the nearest single breeding sites of the Spoon-billed Sandpiper were known 385 km further north in Kamchatka in 2010.

A145 Talk

Conservation pressures and adaptation strategies for the Blue-crowned Laughingthrush in human settlements

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Keywords: Human settlements, Predation pressure, Habitat selection, Clutch size, Hatching rate, Blue-crowned Laughingtrush

When nesting near human settlements, the endangered Blue-crowned Laughingthrush *Pterorhinus courtoisi* suffers mounting survival stress from urbanization-induced habitat fragmentation, food scarcity and frequent human disturbance, restricting population development. Clarifying its adaptive strategies under habitat pressure is vital for targeted conservation. Based on field surveys and artificial nest experiments, this study analyzed predator effects on the bird's nest-site selection. From 2012 to 2024, its nesting height dropped markedly, with nesting habitats shifting from tall arbors in traditional fengshui forests to shrubs in nursery forests. Nursery forests present lower predator diversity, predation rates and predator occurrence frequency than fengshui forests, indicating intense predation pressure in fengshui forests is the core driver of this habitat shift. The species shows divergent reproductive strategies: arbor forests yield higher hatching rates but smaller clutch sizes. On dominant osmanthus trees in nursery forests, it lays more eggs to offset lower hatching efficiency, with the optimal clutch size at 3.1 eggs and a mean hatching rate of 55.08%.

A148 Talk

Results of color marking of the Spoon-billed Sandpiper in southeastern Chukotka, Russia

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Keywords: Spoon-billed Sandpiper, Threatened species, Color marking, Survival, Return rate, Longevity

We were running individual color marking by engraved leg flags the local breeding population of the Spoon-billed Sandpiper in Meinypil'gyno (Chukotka, Russia) in 2012. Since then we marked 72 adult birds, 242 wild chicks and 234 headstarted chicks. Survival rate for adults turned to be similar for males (78.4%) and females (78.1%), but adult males had slightly lower return rate to their former breeding sites than females (82.8% vs. 88.0%). Proportion of

birds marked as headstarted chicks (25.2%) have ever been observed either on the flyway or back to the natal area, insignificantly lower than of wild chicks (28.5%). The return rate among all survived birds was 48.3% for wild chicks and 52.2% for headstarted chicks. The longevity records for individuals marked as adults were at least 11 years for females and 10 years for males; the values for wild chicks were 10 years for males and 9 years for females. The maximum known age for headstarted chicks was 10 years for males and 6 years for females. The mean ages (M±SD) for adult males and females were 4.1±2.3 vs. 5.1±3.0, for wild and headstarted chicks 3.3±2.5 vs. 2.6±2.2, correspondingly.

A149 Talk

Effect of climatic factors on Siberian Crane breeding success, Eastern population

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Keywords: Siberian Crane, Breeding success, Snow cover, Climate change, Subarctic tundra, Incubation

We examined how climatic factors affect breeding success of the Eastern Siberian Crane population, the only naturally extant population of this critically endangered species. Using long-term field observations (1996–2025) and meteorological data from northeastern Yakutia, we analysed the effects of temperature, precipitation, snow cover distribution and hydrological conditions on the breeding success. Years with above-average temperatures and low precipitation during incubation (late May–early June) were associated with higher breeding success. Conversely, delayed snowmelt, prolonged snowstorms and spring floods after heavy snow accumulation led to reduced or failed nesting. Snow cover distribution caused asynchrony in incubation timing of up to 22 days between pairs nesting less than 20 km apart. Although climate warming has not yet had a net negative impact on the population and may even have enriched the food supply on the current evolution step, emerging threats include increased unpredictability of snow conditions, potential epidemiological risks linked to dietary shifts at wintering grounds (Poyang Lake, China), and northward expansion of predators, and knowledge gaps in genetic diversity. Negative anthropogenic impacts and climate change can cause population bottlenecks, leading to irreversible loss of genetic diversity. Conservation strategies must consider the full annual cycle and maintain a precautionary approach.

A150 Talk

Community-level reorganization of a migratory flyway: ecological position, not species identity, predicts directional decline in East Asian–Australasian shorebirds

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Keywords: East Asian–Australasian Flyway (EAAF), Structural coupling, Co-occurrence networks, Functional morphology, Community Ecology, Population trends

Migratory birds are traditionally studied species by species, yet co-migrants share stopovers, bottlenecks, environmental exposures, and increasingly decline together. Whether they form communities whose internal organization governs population dynamics at flyway scale remains untested. We treat the East Asian–Australasian Flyway (EAAF) as an ecologically organized community, inferring similarity from spatial co-occurrence across 53 shorebird species. The structure resolves into two subsystems and migratory guilds along a continuous gradient, converging with flight and foraging morphology (Hand-Wing Index, bill, tarsus) — functional, not artifactual, organization. Using this structure as a scaffold for joint Bayesian abundance estimation, we contract flyway total to 6.7 million and correct order-of-magnitude biases in data-poor species. Population trends align along the same axis, with decline concentrated among high-HWI oceanic migrants — independently corroborated by morphology. These findings provide the first end-to-end empirical demonstration of a flyway as a measurable ecological community, revealing coordinated reorganization detectable before species-level assessments register it.

A151 Talk

The Role of ALX1 in driving the morphology of the avian beak

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Keywords: ALX1, Avian beak development, Morphogenesis, Evolutionary developmental biology

The avian beak is a quintessential model for investigating how adaptive variation is encoded within the genome. While previous research has identified key pathways governing gross beak dimensions, the molecular logic underlying refined morphological traits remains largely unresolved. The homeobox transcription factor ALX1 has emerged as a critical regulator of these processes; however, the precise mechanisms by which it influences beak morphology

remain poorly understood. In this study, we investigate the ALX1-centered gene regulatory network during critical stages of beak development. Our research explores how ALX1 regulates morphological outcomes by coordinating essential regulatory programs. We focus on this factor's role in shaping the beak by influencing various developmental processes. Our results suggest that ALX1 may influence beak morphology during development by modulating genetic programs rather than merely functioning as an on/off switch. Our findings advance a more comprehensive view of the genetic network underlying avian craniofacial diversity.

A152 Poster

Effects of environmental factors on bird song amplitude

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Keywords: Acoustic communication, Urbanization, Background noise, Amplitude quantification

Bird acoustic communication is crucial for core life activities such as mate attraction and territory defense. Song amplitude directly determines signal transmission distance and communication efficiency. In behavioral ecology, amplitude can serve as an honest signal of individual quality and aggressive intent. In evolutionary biology, amplitude is also influenced by phylogenetic history. In applied ecology, source amplitude data serve as a key parameter in passive acoustic monitoring. Urban environments are characterized by continuous, lowfrequency, highintensity anthropogenic noise, which directly interferes with birds that rely on acoustic signals for communication. In this context, birds often exhibit pronounced vocal plasticity in response to noise disturbance. Existing research on amplitude has mostly focused on single habitat types or controlled laboratory conditions, and comparative studies between urban and suburban habitats remain relatively scarce. However, in complex habitats, accurate quantification of bird song amplitude remains a major challenge due to factors like vegetation occlusion and spatiotemporal variation in background noise. This study will focus on bird species shared between urban and suburban areas, and through standardized field measurements, aims to quantify song amplitude in urban and suburban birds, and to elucidate the regulatory role of environmental factors on amplitude expression.

A153 Talk

Urban plants shape plant–bird frugivory interaction networks in urban green spaces

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Keywords: Plant–animal interactions, Plant–frugivore networks, Urban biodiversity, Urban birds, Urban green space, Urban plants

Rapid urbanization is fundamentally reshaping plant–animal interactions that sustain urban ecosystem services and biodiversity. Plant–bird frugivory interactions represent critical mutualistic relationships that illustrate these impacts. Understanding how network structures vary between landscape and non-landscape plant species provides novel insights for designing resilient urban social–ecological systems. We used arboreal infrared cameras to survey nine urban green spaces in Hangzhou, China, over nine months, recording 2,149 independent frugivory interactions between 30 plant and 36 bird species. Network analysis showed that frugivory networks involving landscape plants exhibited lower connectance and higher modularity compared with those involving non-landscape plants. 20 bird species occurred in both network types, linking the entire urban plant–bird network. Furthermore, these shared species overall exhibited significantly higher betweenness centrality and among-module connectivity in the landscape network than in the non-landscape network, and some of them played markedly different roles between the two network types. Our findings reveal that landscape plants significantly alter network architecture and reconfigure bird functional roles, potentially impacting the stability of frugivorous bird-driven ecosystem services. We highlight that integrating diverse plant communities into urban planning frameworks can strengthen ecological network stability and ultimately support biodiversity conservation in rapidly urbanizing regions worldwide.

A154 Talk

Studies on viral metagenomics in Siberian birds

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Keywords: Virus, Metagenomic analysis, Waterfowl, Zoonotic, Natural reservoirs

Wild waterfowl are natural reservoirs of various zoonotic viruses. The main migration routes of waterfowl converge in the Asian part of Russia, connecting this vast region with wintering grounds in Eurasia and Africa. Our results revealed clear geographical patterns and specific clades of both low-pathogenic and highly pathogenic H5Nx viruses. We performed metagenomic analysis samples from some waterfowl species using modified NetoVIR protocol. We detected a wide variety of virus families including *Orthomyxoviridae*, *Paramyxoviridae*, *Adenoviridae*, *et al*. For the first time, we have identified zoonotic viruses carried by mosquitoes, such as Banna virus, which have previously been associated with encephalitis and fever in humans. Using a metagenomic approach, we identified two novel picornaviruses in wild ducks. We were also able to isolate these viruses *in vitro*. In addition, an important fact remains to be clarified - how do these viruses affect the viability of carrier birds and how does this affect the number of a particular bird population? But this question is still waiting for its researchers. This work was supported by Russian Science Foundation (grant # 23-64-00005).

A155 Talk

Geographic variation in sleep behavior of Asian Tits *Parus cinereus* across China

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Keywords: Geographical variation, Asian Tit, Sleep behavior, Ecological adaptation

Sleep is a fundamental behavior in animals; however, relatively few studies have explored the geographic variation in the sleep behaviors of wild animal populations and the ecological factors driving this variation. We monitored the sleep behavior of five populations of Asian Tit *Parus cinereus* across southern to northern China. Nighttime sleep videos of female individuals were recorded using infrared cameras. Additionally, we collected climatic data and assessed the predation risk for each of the five populations. Our study found that the Henan-tit had the longest total sleep time, followed by the Hainan-tit, Liaoning-tit, and Jilin-tit, while the Hebei-tit had the shortest. In terms of the frequency of awakenings per hour, the only significant difference was that the Hainan-tit was lower than the other four populations. Additionally, the Hainan-tit had the longest average duration per awakening, followed by the Hebei-tit, Jilin-tit, and Henan-tit, while the Liaoning-tit had the shortest. Furthermore, night duration, average ambient temperature, and snake predation rate varied across sites, and these environmental and predation factors significantly influenced differences in sleep behavior among populations. Our findings indicate that the sleep behavior of wild birds exhibits geographic variation, and ecological factors may play a crucial role in shaping this variation.

A156 Talk

Do high levels of heavy metals affect the vigilance of an avian community informant?

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Keywords: *Alcippe morrisonia*, Antipredator behavior, Bioindicator, Information ecology, Mining contamination, Mixed-species flocks

Mixed-species flocks (MSFs) enhance predator detection and foraging via social information, and specifically by information flow from nuclear species to flock followers, yet how contamination alters their information ecology remains unclear. We integrated feather metal bioindicators, multi-year MSF surveys, and standardized predator-model and acoustic playback assays across paired mining and reference landscapes in subtropical China,

focusing on Grey-cheeked Fulvetta, a well-studied nuclear species. Using hierarchical models to control site, flock, and habitat effects, we asked whether heavy metal exposure is associated with altered flock structure, reduced vigilance, and weakened information use. Feather metals were markedly elevated at mining sites. MSFs there were encountered less often and were smaller, while per-flock species richness changed little, indicating sparser rather than simplified assemblages. Exposed to predator-plus-playback stimuli, fulvettas at mining sites showed reduced proactive vigilance (head scanning), and recruitment and vigilance responses to fulvetta calls were attenuated. The canonical negative slope between vigilance and group size observed at reference sites was not detectable at mining sites, consistent with degraded sender and receiver performance eroding within-flock information economies. Our results bridge ecotoxicology and information ecology by linking contaminant exposure to impaired perception-attention-decision processes and compromised community-scale information flow.

A158 Talk

The foraging behaviour of Great Knots: age matters!

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Keywords: Shorebirds, Kamchatka, Migration stopover, Mudflats

Great Knots undertake long-distance migrations between their breeding and wintering grounds. We studied the foraging behavior of Great Knots on the intertidal zone in the estuaries of the Khairyuzova and Belogolovaya rivers on Kamchatka – the first major stopover site during their autumn migration. At this site, they feed on the mollusk *Macoma balthica* by probing the substrate during low tide. Juvenile Great Knots, which feed on surface-active invertebrates at their breeding grounds, lack the skills to use this foraging method efficiently at the stopover. In a previous study, we showed that the bills of young birds at this stopover are shorter than those of adults, which may narrow their prey spectrum. We compared the behavior of young and adult birds during foraging. We analyzed 180 60-second videos. The footage was processed using RealTimer (1.30) and R 4.5.2. Juveniles (n=90) pecked food from the substrate surface more often and for longer durations; they also spent more time moving, preening, and resting during foraging while adults (n=90) spent more time probing the substrate and did more frequently (U-test, $p < 0.05$). The mixed foraging strategy and shorter bill of juvenile knots may reduce foraging efficiency, contributing to their high first-year mortality.

A159 Talk

Solos vs duets: how do different female singing behaviors influence the evolution of male song features in songbirds?

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Keywords: Bioacoustics, Bird song, Duetting, Female song, Songbird

In some songbird species, males and females do not just sing alone, but also sing together to communicate. Solo songs are produced by a single bird, whereas duets include two birds, usually one female and one male, singing to each other in a coordinated way. Since duetting birds are both producers and receivers of song, they sing in a temporally alternating pattern and/or in different song types to avoid masking the sound signals. Previous research has mostly focused on male solo songs and female preferences; here, we ask: does coordinated singing with a female drive male song to evolve? We hypothesize that female song and duetting promote a higher rate of evolution in male song traits to meet the demands of interactive communication. We categorized species-level female singing behavior into 'no song', 'solo songs', or 'duets', and collected species-level measurements of male solo songs. Using phylogenetic comparative analyses, we tested for evolutionary associations between these variables. We found that males' peak frequency is lower overall and also evolves more quickly in duetting species. In addition, song duration also evolves faster in lineages with female solo songs. These results indicate that different singing interactions can influence song evolution.

A160 Talk

Why are some birds more window collision-prone than others?

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Keywords: Bird-window collisions, Citizen science, Conservation, Functional traits

Although more than 1,800 bird species worldwide are known to collide with windows, some species appear to be more susceptible to collisions than others. These ‘super-colliders’ are distributed across the bird tree of life, but tend to cluster within a small subset of families such as Pigeons, Wood Warblers, Pittas, and New World Sparrows. To better understand why some species are more collision-prone than others, we conducted a meta-analysis using a large citizen/community science dataset of bird-window collision observations, filtered to exclude regions with low detection rates, to assess the correlation between collision frequency and avian life history traits. We additionally ran family-specific analyses to account for the fact that the drivers of bird collisions likely differ between different bird families. We extended our models to predict the likely collision risk of species from under-sampled parts of the world such as Australia and the Middle East. The results of our models allow us to identify regions where super-colliding species may be especially abundant and therefore in need of collision mitigation solutions.

A161 Poster

The larger the egg, the safer the nest: a study on the negative correlation between nest predation rates and egg size of two tropical phasianids in Hainan

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Keywords: Nest predation, Phasianids, Egg size, Artificial nest, Infrared camera

Nest predation is a major driver of breeding failure, especially for ground-nesting phasianids, whose vulnerability to endangerment is well recognized, yet the role of egg size in their nest predation remains understudied. We examined how egg size affects predation rates and predator assemblages of Red Junglefowl and Chinese Francolin. From April to September 2023, 167 artificial nests with four size-class eggs were deployed across their sympatric ranges in Hainan Datian and Bangxi Nature Reserves and monitored via infrared cameras. Predation rate declined with increasing egg size, showing a clear negative correlation. Small-to-medium mammals dominated predation (70%), followed by birds (20%) and snakes (10%), while small rodents had negligible impacts. Egg size likely explains the higher predation pressure on Chinese Francolin. Matching experimental egg size to natural eggs is recommended to improve artificial nest simulations, offering empirical insights into tropical phasianid predation mechanisms and supporting targeted conservation strategies.

A163 Talk

Population trend of the Brown Shrike *Lanius cristatus superciliosus* on Mt. Fuji: the process of population collapse and conservation challenges

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Keywords: Endangered Species, Related species, Habitat, Migration

The Brown Shrike *Lanius cristatus superciliosus* was uplisted to Critically Endangered in the 2026 Ministry of the Environment Red List of Japan, reflecting its marked nationwide decline as a summer migrant. Since 2017, we have monitored a breeding population at the foot of Mt. Fuji and conducted basic ecological studies on breeding success, food resources, and nesting habitat. In this presentation, we focus on changes in the population over the years and describe in detail the process by which the Mt. Fuji population has declined toward local extinction. We also compare this trend with that of the common Bull-headed Shrike *L. bucephalus* and report the sex-ratio bias and backcrossing in Brown Shrikes observed during this process. Because the breeding habitat in this area does not appear to have changed substantially, further research is needed on the species' ecology, including at stopover and wintering sites.

A164 Talk

Raptors that have collided with windows: analyzing raptor window collisions factors in subtropical Asia by citizen science and wildlife rehabilitation data

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Keywords: Age and sex distribution, Bird window collisions, Citizen science raptors, Rehabilitation center, Spatial-environmental factors, Taiwan

Bird-window collisions (BWC) have become a crucial conservation issue globally. However, research on window collisions remains scarce in Asia, particularly in Taiwan. Previous studies have indicated that the collision-prone species in Taiwan differ from those in temperate regions. Yet, for raptors, there is still a lack of understanding about their collision species composition, seasonality, age/sex structure, and spatial-environmental factors associations. We collected data from 2021 to 2024 among social media and rehabilitation centers, compiling over 500 individuals. A total of 16 raptor species were recorded, representing approximately 1/3 of Taiwan's raptor species. The top five collision-prone species were *Lophospiza trivirgata* (n=276), the most frequently recorded species, followed by *Otus lettia* (n=68), *Ninox japonica* (n=49), *Tachyspiza virgata* (n=34), and *Taenioptynx brodiei* (n=17). We found that autumn and winter have more collisions of all raptors, and age compositions are different among the top five collision-prone species. Furthermore, female immature and male mature individuals are more prone to collide than others in *Lophospiza trivirgata*. The findings can serve as a baseline for identifying collision risks and planning mitigation measures in raptor conservation.

A165 Talk

Dead birds, living data: from casualty to biodiversity resource

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Keywords: Specimen salvage, Natural history collections, Citizen science, Urban ecology, Avian mortality, Specimen-based research

Collisions with anthropogenic structures cause substantial avian mortality worldwide, yet many incidents go unrecorded, limiting understanding of passive urban ecological impacts on avifauna. In Singapore, the Dead Bird Hotline is a citizen science salvage initiative that addresses this gap through a coordinated, community-assisted system for reporting and recovering bird carcasses. Recovered specimens are systematically documented and integrated into physical and digital biorepositories, generating valuable data on Singapore's avifaunal landscape and enabling new avenues for scientific inquiry. Amid growing ethical scrutiny of active specimen collection, this initiative demonstrates that specimen salvage can serve as a scientifically robust and ethically defensible alternative. All materials are processed

using established curation protocols, contributing to long-term scientific reference collections that include tissue and DNA archives. The initiative has significantly strengthened Singapore's ornithological collections, expanding taxonomic coverage and improving representation of rarely encountered species. Salvaged specimens have also enabled documentation of new national records, underscoring their scientific value. These collections support a wide range of applications, including studies of migratory phenology, population genetics, and broader ecological and evolutionary research. By integrating public participation with institutional curation, the Dead Bird Hotline provides a scalable and replicable model for advancing ornithology in contemporary times.

A166 Talk

Human pressures homogenise bird diversity across multiple dimensions in a South Asian landscape

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Keywords: β-diversity, Environmental filtering, Farmland, Forest, Human footprint, Landscape heterogeneity

Understanding how human pressures interact with landscape heterogeneity is essential for bird conservation and the development of practical management strategies. Although biodiversity loss is a growing concern, we still know little about how these factors together shape different aspects of bird diversity in highly human-dominated landscapes. We examined how human pressures and landscape heterogeneity influence taxonomic, functional, and phylogenetic diversity across human-dominated (farmland and settlement) and natural (forest and riverine) habitats within the Parsa–Koshi Complex of Nepal, a South Asian landscape experiencing rapid environmental change. Our findings showed that human-dominated habitats consistently had lower taxonomic (α and β), functional, and phylogenetic diversity compared to natural habitats. Settlements, in particular, showed strong functional clustering, which highlights environmental filtering that favours generalist and adaptable species. In contrast, natural habitats, particularly forests, showed stronger phylogenetic clustering, likely because ongoing human-mediated disturbances have allowed persistence of certain dominant clades. Increasing human pressure reduced diversity across most metrics, whereas greater landscape heterogeneity supported higher diversity levels, suggesting that a varied landscape can buffer against biodiversity loss. These results highlight the need to reduce human pressure and maintain landscape heterogeneity as practical strategies for sustaining bird diversity amid ongoing environmental changes.

A167 Talk

The role of wild birds in long-distance migrations of viruses

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Keywords: Virus ecology, Wild birds, Birds migration, Viruses, Avian influenza virus

The role of migration birds as carriers of viruses dangerous for humans and farm animals is established for a big pull of viruses, such as: Avian Influenza virus, NDV (*Paramyxovirus*), Tick-borne encephalitis (*Flavivirus*), Western and Eastern equine encephalitis (*Alphavirus*), Batai (*Bunyavirus*), etc. These viruses are connected with migratory birds and expression of respective significance for public health is a matter of time or the result of the absence monitoring. The confirmation of this concept was obtained when penetration of highly pathogenic AIV/H5Nx (HPAIV) was monitored. Example of HPAIV is the most famous since it has clear significance for public health. At the same time, the wild bird's mortality from infectious diseases is also still underestimated. However, last HPAIV outbreaks in wild waterfowl and shorebirds at Far East and European part of Russia reviled the high rate of mortality which can dramatically decrease a population density. Drastic increase of interactions between humanity and wild world is the source of new emerging-reemerging epidemic/epizootic situations, and preparedness for it requires global efforts. For that reason, the regular extending monitoring in the wild bird's population is the primary measure which should be realized. Acknowledgements: the study was supported by RSF, project 25-44-02015.

A168 Poster

Cocktail of contaminants: spatiotemporal exposure to trace metals and PFAS in Adélie Penguins under Antarctic sea-ice fluctuations

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Keywords: Adélie penguin, Trace metals, PFAS, Sea ice, Contaminant exposure, Antarctic seabirds

Adélie Penguins *Pygoscelis adeliae* are sentinel Antarctic seabirds that integrate contaminant exposure across polar marine food webs. Yet how sea-ice variability relates to their exposure to contaminant mixtures remains poorly understood. This study examines the spatiotemporal exposure of Adélie Penguins to trace metals and per- and polyfluoroalkyl substances (PFAS) under Antarctic sea-ice fluctuations. Penguin samples collected across multiple years and/or sites are analysed for selected trace metals and PFAS compounds. Satellite-derived sea-ice metrics are extracted for corresponding sampling years and regions to characterise local sea-ice conditions. We compare contaminant burdens among years, regions and sea-ice conditions, and use multivariate analyses to identify dominant exposure profiles within the contaminant mixture. This work provides a baseline assessment of combined metal and PFAS exposure in Adélie penguins and evaluates whether sea-ice

variability is associated with shifts in contaminant burdens. By linking chemical exposure with sea-ice dynamics, this study contributes to understanding how global change may reshape contaminant risks for Antarctic seabirds and polar marine ecosystems.

A169 Poster

Screening of microsatellite markers in the Sichuan Partridge *Arborophila rufipectus* based on whole-genome resequencing

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Keywords: *Arborophila rufipectus*, Sichuan Hill Partridge, Whole-genome resequencing, Microsatellite markers, Genetic diversity, Non-invasive sampling

The Sichuan Hill Partridge *Arborophila rufipectus* is an endangered pheasant species endemic to the mountainous regions of southwestern China, with an extremely narrow distribution range restricted to central-southern Sichuan and northeastern Yunnan. Microsatellite markers are essential tools for assessing population genetic diversity and managing captive breeding programs. In this study, the reference genome of *A. rufipectus* was approximately 1.09 Gb in size, containing 167,394 microsatellite repeat sequences. Seven individuals were subjected to whole-genome resequencing at an average coverage of 25 times, and the clean reads were mapped to the reference genome. Using the HipSTR software for polymorphic microsatellite screening, a total of 34,435 polymorphic microsatellite loci were identified, providing a rich resource for marker development. Forty-nine candidate microsatellite loci were selected for experimental validation. Of these, 33 loci were successfully amplified across 21 *A. rufipectus* DNA samples, with an average observed heterozygosity (H_O) of 0.4458 and an average expected heterozygosity (H_E) of 0.3799. Notably, several loci could also be amplified from fecal-derived DNA, demonstrating their applicability to non-invasive sampling. These polymorphic microsatellite markers provide a valuable molecular toolkit for future studies on population genetic structure, individual identification, pedigree analysis, and conservation genetics of this critically endangered species.

A170 Talk

Methods for assessing IUCN Red List status using large-scale citizen science data: lessons from the State of India's Birds initiative

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Keywords: IUCN, Red List, eBird, Population trends, Range size, Modeling

Reliable assessment of species for the IUCN Red List depends on information about range size, population size, and population trends, yet such data are often limited in tropical regions. In India, the rapid growth of citizen science platforms, particularly eBird, has

generated extensive datasets that help address these gaps. The State of India's Birds initiative represents one of the largest efforts to use citizen science data for national-scale avian conservation assessments. We present methodological insights from applying large-scale checklist and occurrence data to support national Red List assessments, a government priority. We describe approaches used to estimate Extent of Occurrence (EOO) and Area of Occupancy (AOO), infer population trends, and account for uneven observer effort, geographic bias, detectability, and changing observer behaviour. We also suggest adaptations to commonly used EOO and AOO approaches when citizen science forms the primary data source. Our analyses reveal substantial declines in several widespread bird species that may meet thresholds for threatened categories despite large distributions. Overall, citizen science datasets can substantially strengthen conservation assessments when combined with analytical frameworks and expert validation.

A171 Poster

Diet of urban Pink-necked Green Pigeons revealed through eDNA

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Keywords: Urban ecology, *Treron vernans*, Frugivory, Environmental DNA

In Singapore, the Pink-necked Green Pigeon *Treron vernans* is one of the most common birds, yet its ecology in urban environments is poorly studied. Using faecal eDNA and two plant genetic barcode markers (rbcL and ITS2), we investigated the diet of this species in a tropical city-state that has undergone rapid and near-total urbanisation. All successfully sequenced faecal samples contained DNA from native *Ficus* species, with two samples identified to *Ficus microcarpa* (Chinese banyan). These results suggest a strong dietary reliance on native fig species and highlight the potential role of this pigeon as a seed disperser within urban ecosystems. This pilot study demonstrates the utility of faecal eDNA barcoding as a non-invasive tool for investigating urban frugivore diets and motivates larger-scale studies of the Pink-necked Green Pigeon's ecological function both in and out of cities.

A172 Poster

Seasonal effects of urban park landscape structure on taxonomic, functional, and phylogenetic diversity of birds

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Keywords: Urban parks, Avian diversity, Functional diversity, Phylogenetic diversity, Citizen science, Seasonal variation

Analyzing 30 Beijing urban parks (2021–2024), this study investigates seasonal avian diversity across taxonomic, functional, and phylogenetic dimensions. Results demonstrate that while species richness remains stable, phylogenetic (PD) and functional diversity (FD) decline

significantly in winter, exhibiting distinct clustering. This confirms Hypothesis 1: community assembly shifts from breeding-season competition to winter environmental filtering driven by cold stress and resource scarcity. Furthermore, landscape drivers exhibit marked seasonal variation, supporting Hypothesis 2. Breeding season diversity follows the species–area relationship, being primarily governed by park area. In contrast, winter patterns are driven by landscape heterogeneity (SHDI) and edge density (ED), which provide vital microhabitats that enhance community stability. Notably, impervious surfaces facilitate breeding functional diversity but intensify winter filtering, negatively impacting phylogenetic structure. Collectively, these findings underscore the necessity of adopting a multidimensional, seasonal perspective in urban biodiversity research. By identifying key landscape features that sustain avian communities, this study provides a robust scientific basis for the strategic planning and management of temperate urban green spaces to maintain long-term ecosystem functioning.

A174 Poster

Exploring human language features in bird communication systems

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Keywords: Language evolution, Animal communication, Behavioral science, Comparative cognition

Humans exchange information through language, a communication system that plays a fundamental role in individual cognition, social organization, and the development of civilization. Language has long been regarded as a defining human feature. However, it still remains unclear whether language developed uniquely in the hominid lineage. Investigating language-like features in animal communication systems requires clear, testable, and operational frameworks, as previous studies have often lacked conceptual consistency and methodological integration. Behavioral evidence provides a common observable basis to investigate language-like features in communication system of both human and other animals. Design Features of Language (Hockett 1960) was considered to be a foundational framework for understanding the essence of human language. Some of these features are shared across species, however, whether certain features existing in the communication systems of animals remains controversial (i.e. semanticity, arbitrariness and displacement). Based on existing research, this review first summarizes the unified and experimentally testable definition of design features in animal communication systems, then discusses effective behavioral approaches for investigating these features. Exploring language-like features in animal communication systems has interdisciplinary significance, which helps to understand the key evolutionary issue of language.

A175 Talk

Nest-site selection and breeding behavior of Lesser Kestrel in semi-desert region of Mongolia

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Keywords: Nestling age, Nest site selection, Parental care, Lesser Kestrel, Mongolia, Feeding rate

We investigated nest-site selection, influence of nesting-site on breeding success, as well as breeding behavior of Lesser Kestrel in Mongolia. We measured a total of 50 nest-site cavities, and random 50 cavities. For behavior study, we installed camera-traps nearby nests' entrances (n=8). Our best-model suggested that cavity-depth and orientation are the key characteristics for nest-site selection of Lesser Kestrel (AICc=42.22). Additionally, we modeled the factor influencing for egg-hatching rate and fledging-rate of Lesser Kestrel. We used the same variables that we measured for nest-site selection. We checked a number of eggs (May-June) and nestlings (June-July) from 20 active nests. Interestingly, our findings suggested that nest height from underground and size of nests entrance are the key factors to support high rate of hatching in Mongolia. According to parental-care strategy results, parental nest-visiting events increased with nestlings aged (by-day) (R^2 = 0.29, p = 0.005). In contrast, parental nest-stay duration decreased when nestlings matured (R^2=0.47, p = 0.001). We also found that females stayed in the nests significantly longer than males. In addition, we divided parental nest-visiting events into: with food and without food. The 67.6% of the total visiting events were recorded as feeding events (with-food). The most of the delivered prey was lizards, *Phrynocephalus versicolor*.

A181 Talk

Habitat preferences of Brown Shrikes across breeding and wintering grounds: endangered in Japan, common in Thailand

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Keywords: Land use change, Rice field, Grassland species, Agricultural landscape, Migratory bird conservation, Asian songbird crisis

Migratory birds are declining worldwide, and identifying the key pressures that drive these declines is a prerequisite for effective conservation. Because migrants use different regions at different times of the year, it is often difficult to identify when and where the pressures occur, particularly in the least studied East Asian–Australasian Flyway. The Brown Shrike *Lanius*

cristatus is one of the representative openland migratory birds in this flyway and breeds widely across eastern Asia. However, the Japanese subspecies *L. c. superciliosus* has undergone a severe decline. Here, we conducted field surveys to compare habitat preferences of the species in agricultural landscapes between its breeding grounds in Japan and wintering grounds in Thailand. In the breeding grounds, Brown Shrikes were extremely scarce, with only two detections across 751 surveyed transects. In contrast, in Thailand, we detected 106 individuals across 206 survey transects. The abundance of Brown Shrikes was significantly higher in single-cropped rice fields than those in multi-cropped rice fields and residential areas during the wintering season. Although these results are based on a different subspecies, they still provide useful insight into species-level habitat preferences. In Japan, conservation should prioritize the protection of remaining breeding habitat, whereas on the wintering grounds, multiple rice cropping and urbanization may represent important pressures.

A182 Talk

Island area mediates the trajectory of functional β-diversity under regional warming: homogenization between similar-sized islands but differentiation across area gradients

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Keywords: Bird communities, Climate warming, Habitat fragmentation, Homogenization, Functional β-diversity, Spatial turnover

Climate warming is driving widespread biotic homogenization, yet empirical evidence from fragmented landscapes remains inconsistent. Here, we explore the temporal dynamics of avian functional β-diversity using a 10-year dataset (2012–2021) from a land-bridge island system (Thousand Island Lake, China). By integrating functional traits with long-term community monitoring across 36 islands, we disentangled how habitat fragmentation modulates community compositional difference under climate warming. We found that the temporal stability of total functional β-diversity masked a structural transition: a significant decline in spatial turnover coupled with an increase in nestedness-resultant dissimilarity. Importantly, these temporal shifts in community structure were associated with regional warming and modulated by island area. We observed a trend of functional homogenization (dominated by decreased turnover) between islands of similar size but functional differentiation (dominated by increased nestedness) as the difference in island area

increased. Consequently, the spatial determinant role of island area was amplified following climate warming. Our results demonstrate that climate warming acts synergistically with habitat fragmentation to reorganize spatial biodiversity. We conclude that maintaining large habitat patches as thermal refugia and preserving a gradient of habitat heterogeneity are essential to buffer against functional homogenization and loss of complementarity in a warming world.

A185 Talk

Nestling birds learn socially to eavesdrop on heterospecific alarm calls through acoustic association

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Keywords: Nestlings, Daurian Redstart, Alarm call, Nest predation, Social learning, Acoustic association

Animals often eavesdrop on signals intended for others to gather information about their environment. While adult animals have been shown to learn to recognize unfamiliar heterospecific alarm calls through both social and asocial learning, it remains unclear whether and how young animals learn to recognize unfamiliar alarm calls. We show experimentally that nestling Daurian Redstarts *Phoenicurus auroreus* can socially learn to recognize unfamiliar heterospecific alarm signals by associating them with conspecific alarm calls. We trained nestlings by presenting two unfamiliar sounds, one together with conspecific alarm calls (training) and one without (control). Before training, nestlings showed similarly little response to both novel sounds. After training, however, nestlings showed clear anti-predator responses to the training sound, but not to the control sound. These results show that nestling birds can socially learn to associate novel sounds with known alarm calls, even without visual confirmation of danger.

A186 Talk

Global patterns and drivers of artificial habitat use in birds

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Keywords: Birds, Artificial habitats, Habitat use, Threatened species

In the Anthropocene, natural habitats are increasingly fragmented and degraded, while artificial habitats are rapidly expanding and being used by more species. Although artificial habitats can provide alternative resources, the global pattern of wildlife use across different

artificial habitat types remains unclear. Most previous studies examined specific habitat types or restricted geographic regions, which limits understanding of the overall role of artificial habitats in supporting global biodiversity. Here we compiled global data on artificial habitat use for 11,010 bird species and examined how species traits (body mass, trophic level, habitat diversity, hand-wing index, and range size) influence artificial habitat use. Our results show that more than half of all bird species use at least one artificial habitat. Bayesian generalized linear mixed models indicate that species with higher habitat diversity, smaller body mass, smaller range size, and herbivorous or omnivorous diets are more likely to use artificial habitats. Overall, while artificial habitats have become important environments for many birds, they support fewer species of conservation concern. Our results suggest that different types of artificial habitats vary in their ability to support bird species. These findings provide quantitative evidence to improve bird conservation and management strategies at the global scale.

A187 Poster

Late-Holocene gene flow implicates neuronal genes and other functional loci in a rapid radiation of tropical songbirds

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Keywords: Southeast Asia, Introgression, Speciation, *Zosterops*, Phylogenomics, Population genomics

White-eyes *Zosterops* are known as great speciators, having diversified into over 120 species through the Quaternary. Previous research has suggested that their propensity for inter-specific gene flow may lead to such rapid differentiation rates. We investigated a group of white-eye species from Sundaland – the evolutionary cradle of the genus – where up to a handful of species may coexist on the same landmasses. Using whole genomes, we detect rampant gene flow among Sundaic white-eye lineages, much of it having occurred in the warm late Holocene epoch within the last ~1,000 years, which saw a consolidation of the fragmentation of landmasses into separate islands. Genes implicated in neuronal system and sugar metabolism were repeatedly identified as being concentrated on genomic sections transferred between species during episodes of genetic introgression, supporting the view that inter-specific gene flow has functional ramifications for white-eye diversification.

A188 Talk

Global analyses of anthropogenic effects on nest predation

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Keywords: Conservation biology, Biodiversity, Global analysis, Human footprint, Land cover, Waders

Nest predation is one of the primary causes of reproductive failures in birds. Understanding the causes of nest predation and their implications for conservation are urgently needed, since many shorebirds are declining. Here we use a global database on nest predation that includes 354 shorebird populations in 236 locations and in total covers 60,538 nests. Using daily nest predation rate as a response variable in phylogenetically and spatially controlled generalized linear models, we examine how variation in proximity to humans and human-induced disturbance influences nest predation across latitudinal regions. We predict that higher levels of anthropogenic effects will lead to increased nest predation. In addition, we conjecture that nesting habitat modulates human-induced effects since open and less vegetated habitats will experience higher predation risk than more concealed habitats. Our ultimate objective is to highlight the most vulnerable populations in the context of nest predation and offer guidance for conservation planning and policies aimed at protecting breeding habitats of shorebirds.

A189 Poster

Consitutive active GCGR is strong cognate receptor of Omega-3 for lipid regulation in birds

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Keywords: Constitutively active GCGR, Omega-3 fatty acids, DHA, Obesity, Non-alcoholic steatohepatitis, Metabolism

Birds exhibit distinct physiological adaptations, such as high metabolic rates, powerful yet lightweight musculature, and an exceptional ability to rapidly mobilize fat to fuel sustained flight. Unlike mammals—most of which are flightless and prone to weight gain under caloric excess—many avian species maintain low body mass throughout life, despite conserved lipid and glucose metabolic pathways across vertebrates. Previous studies have shown that glucagon receptors (GCGRs) in non-placental vertebrates, including birds, possess constitutive activity and participate in hepatic and adipose metabolic regulation. However, the functional divergence between avian and mammalian GCGRs and their physiological implications remain poorly understood. In this study, we identify a novel metabolic role for constitutively active avian GCGRs, demonstrating that they act as receptors responsive to omega-3 fatty acids. Using avian-derived cell lines, we confirmed the constitutive activity of bird GCGRs and performed ligand screening, revealing that omega-3 fatty acids (especially DHA) selectively and strongly enhance downstream cAMP accumulation. *In vivo*, omega-3 supplementation significantly enhanced the lipid metabolic effects of constitutively active

avian GCGRs in mouse models of diet-induced obesity and non-alcoholic steatohepatitis (NASH), resulting in weight loss, improved lipid catabolism, reduced hepatic fibrosis, and elevated thermogenesis-related gene expression.

A190 Talk

Unexpected migration routes of East Asian populations of Rough-legged Hawk *Buteo lagopus*

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Keywords: Raptors, Animal tracking, Arctic, Flyways, North-Eastern Asia, Avian migration

Recent advances in animal tracking have uncovered many spectacular migration patterns, and here we show that impressive cases of previously unknown migration directions and excessive travel distances are not exclusive features of long-distance, tropical migrants. We used GPS – GSM tracking to reveal migration strategies of Rough-legged Hawk *Buteo lagopus* in North-Eastern Eurasia. This species breeds in circumpolar tundra and northern boreal forest, and spends winter in temperate regions. Birds tagged at the wintering site in Primorie went northward in spring to Chukotka and northern Kamchatka, making a detour around the western side of the Sea of Okhotsk, then changed direction eastward; one individual went even further to spend the breeding season in Alaska. Hawks used the same routes for the fall migration. Birds tagged in breeding site in northern Yakutia went for wintering to the Northern Caspian and Volga regions, crossing Siberia and Kazakhstan in south-western direction. All individuals used the same routes for spring migration. Easternmost hawks covered more than 4,000 km one way (5,000 km for the Alaskan individual), while one of the Yakutian birds flew for over 6,000 km. Therefore, in Asia, this temperate migrant resembles a long-distance tropical migrant both in terms of travel distance and migration connectivity.

A191 Poster

Productivity and human disturbance shape contrasting distribution patterns of core and occasional bird species in a subtropical forest reserve in Southern China

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Keywords: Nature reserve zoning, Anthropogenic disturbance, Edge effect, Forest management

Protected areas often use zoning to balance conservation with sustainable development, but its effectiveness for animal communities remains unclear. We examined how reserve zoning and human disturbance jointly influence bird diversity in a restored subtropical forest in Southeast China. Using grid-based surveys and statistical models, we assessed community, functional group, and species level responses to zoning, disturbance, and landscape factors. Results showed a mismatch between management zones and avian diversity: richness hotspots occurred not in strictly protected core areas, but in experimental zones near human settlements. This pattern reflected contrasting community responses. High productivity mainly supported abundant core species, whereas proximity to settlements attracted occasional species. Settlements may increase vegetation complexity and resource availability, promoting species coexistence. However, birds strongly avoided reserve edges, where disturbance from surrounding landscapes is often intense. We conclude that static zoning has limited capacity to guide ecosystem recovery. Effective management should both enhance habitat heterogeneity to maintain broad community richness and preserve core areas as irreplaceable refugia for disturbance-sensitive species, even when these areas are not richness hotspots.

A192 Poster

Season-dependent trait-environment filtering influences interaction networks in mixed-species bird flocks

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Keywords: Ecological networks, Environment, Functional traits, Mixed-species flocks, Species interactions

Seasonal variation can strongly influence species interactions, yet its effects on interaction networks remain poorly understood in tropical systems. We surveyed mixed-species bird flocks (MSFs) across 20 2 × 2 km grid cells in a subtropical forest in southern China, quantified seasonal changes in flock composition and network structure, and examined how species traits and environmental factors drive these changes. More species and individuals joined MSFs in the non-breeding season, producing more connected and cohesive networks. During the breeding season, network structure was associated with breeding traits: species

with larger clutch sizes showed higher association strength, but overall network connectivity and cohesion declined, suggesting trade-offs imposed by parental care. Network structure in the non-breeding season was related to morphological traits, with smaller species forming more cohesive networks. Environmental effects were also season dependent. Connectivity increased with elevation, forest cover and canopy cover in the breeding season, whereas in the non-breeding season networks were most connected and cohesive at low elevations with high tree species richness and vegetation productivity. Our results demonstrate the importance of seasonal effects on MSFs and highlight the need to maintain mountain connectivity, as communities may rely on different parts of mountains across seasons.

A193 Talk

Species diversity increases information flow about predation in bird communities

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Keywords: Bird communities, Communication, Interspecific Information transfer, Mixed-species groups, Mobbing, Sociality

Interspecific information flow impacts organismal fitness, and population- through ecosystem-level processes. Yet how the species diversity of information sources influences flow is unclear. Eliciting vocal responses using predator models across a latitudinal gradient, we show that the species diversity of birds increases public information about predation, both in the low-cost system of mobbing and in the higher-cost system of alarm calls. A similar result was found across a fragment area gradient for mobbing, and this system was then used to test how species diversity affects interspecific information flow. We conducted a playback experiment, manipulating the species richness of the playback sound files by varying the number of species producing mobbing calls (1–8 species). In an experiment in which the call rate across treatments was held constant, and only heterospecific responses were counted, increasing species richness of the sound files increased the number of species and individuals responding, the number of calls produced and their frequency range, and decreased latency to call. There was little evidence that the signals of one particular species changed responses. This supports the hypothesis that the species diversity of a community is a key component influencing the quantity and quality of information flow inside it.

A194 Poster

Local variation in diet composition of bird communities in Baima Snow Mountain, Yunnan

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Keywords: Elevational zones, Passeriformes, Species distribution, Dietary differentiation, DNA metabarcoding

Baima Snow Mountain is one of the tremendous mountain series extending southeastward from the Qinghai–Tibet Plateau, exhibiting strong fauna difference and habitat heterogeneity along elevational gradients. Passerine birds were selected for field surveys and DNA-based diet analysis to assess species composition and food-resource selection. Field survey and sampling at low altitude (LA: 2000-2200m) and high altitude (HA: 3900–4100 m). 1) Passeriformes were the majority group, accounting for 91.93% and 98.74% of the avian communities in HA and LA, respectively. And the species composition varied between LA and HA. 2) Birds' diet clustering differed significantly between the LA and HA zones ($p < 0.01$). The Shannon diversity of insects consumed by birds in LA was higher than that in HA. In LA, insects were dominated by *Patrobus cinctus* and *Hypena sp.*, while in HA they were mainly *Microbembex nigifrons* and *Formica lemani*. Plants were dominated by *Nekemias grossedentata* in LA and by *Potentilla leuconota* and *Rosa rugosa* in HA. 3) Same genus exhibited significant dietary differentiation across elevations. In conclusion, differentiation in food niches drives the spatial distribution of passerine populations.

A195 Poster

Mitigating interspecific competition between Great Cormorant *Phalacrocorax carbo* and Black-faced Spoonbill *Platalea minor* for nest site through selective deterrence

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Keywords: Endangered species, Management, Spatial segregation, Deterrent kite, Human intervention, Mixed colony

The rapid population expansion of the Great Cormorant *Phalacrocorax carbo* has emerged as a significant ecological and social concern. In mixed-species breeding colonies, the establishment of *P. carbo* often leads to intense competition for nesting sites, resulting in displaced native species, reduced reproductive success, and decreased population sizes. This study investigated the impact of *P. carbo* on the breeding colonies of the Black-faced

Spoonbill *Platalea minor* and the Mongolian Gull *Larus mongolicus*, as well as management strategies for mitigating interspecific competition in Incheon, South Korea, from 2024 to 2026. To mitigate interspecific competition, we implemented two experimental deterrence methods: 1) installation of vertical poles at regular intervals, and 2) the deployment of bird-deterrent kites. While the installation of poles and lines initially inhibited nesting, *P. carbo* individuals exhibited rapid habituation and attempted to resume breeding within a few days. In contrast, bird-deterrent kites proved highly effective in selectively suppressing initiation of the breeding activities of *P. carbo* without adversely affecting *P. minor* or *L. mongolicus*. Our findings suggest that selective behavioral deterrence can be an effective management tool for maintaining biodiversity in habitats under pressure from dominant avian competitors.

A196 Poster

Non-breeding parental care strategies for Siberian Cranes based on breeding site climate debt drivers

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Keywords: Siberian Crane, Parental care, Behavioral patterns, Economics of foraging behavior, Multimodal Large Model

The Siberian Crane *Grus leucogeranus* has been classified as Critically Endangered (CR) by the IUCN. Research on its population dynamics, ecology, behavior, and micro level has always been a focus of ornithology at home and abroad. Parental care is a part of reproductive behavior, which belongs to the instinctive behavior of animals and is also a common social behavior among animals. During the non breeding period, it has been observed that white cranes have a high proportion of parental care behavior. However, white cranes are different from other crane species that also overwinter in the Poyang Lake Basin. Their reproduction is difficult to study in the remote polar tundra, and research on this aspect of their biology remains limited. Based on this, a study was conducted on the non-breeding behavior of white cranes during their migration and overwintering life history from October 2022 to April 2023 and from October 2023 to March 2024. The fine-tuned multimodal large model Qwen2.5VL offers multiple advantages for population statistics and for discriminating individual and interactive behaviors in videos of Siberian crane behavior. These advantages include high-precision recognition, complex behavior understanding, context awareness, and high-quality description generation, as well as lower annotation cost and faster annotation speed.

A197 Poster

Synergy-driven mechanism of avian diversity distribution patterns across China in the 21st Century

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Keywords: Avian of China, Diversity distribution patterns, Climate hypothesis, Energy hypothesis, Human disturbance hypothesis, Collaboration-driven

As a sensitive indicator group of environmental change, birds and their diversity are frequently used to evaluate the effectiveness of ecological conservation. Since the 21st century, the number of recorded bird species in China has exceeded 1,500; to what extent this increase reflects a genuine enhancement of biodiversity, and whether reliance solely on species richness (SR) may mask the risk of community functional homogenization, thereby undermining ecosystem stability and resilience, remains insufficiently assessed. Therefore, this study focuses on birds across all of China, utilizing standardized provincial-level distribution data from 2005 to 2023 combined with multidimensional functional traits to calculate species richness and functional diversity indices for each province. The results showed that natural and anthropogenic factors differentially drive α and β diversity across multiple scales, topography dominates α diversity patterns, while heterogeneity in climate, energy, and human activities collectively regulates β diversity components. This study identified true hotspots such as the southwestern mountains that simultaneously possess high endemism and high vulnerability, while also revealing that regions with high species counts in South China face risks of functional redundancy and loss of ecological uniqueness.

A198 Poster

Environmental driving, human impacts and its public conservation awareness for population characteristics pattern of migratory cranes in Punjab Province, Pakistan

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Keywords: Migratory cranes, Population characteristics pattern, Environmental driving; Human impacts, Public conservation awareness

Migratory cranes serve as vital bioindicators of wetland health and regional biodiversity, yet their populations in Punjab, Pakistan, have undergone alarming declines due to habitat degradation, climate change, illegal hunting, and other anthropogenic pressures. Comprehensive, long-term assessments of population characteristics pattern, spatial distributions, and the environmental and human drivers influencing their persistence remain scarce. From Fall 2021 to Spring 2025, systematic field surveys were conducted across eight districts of Punjab along the Indus Flyway, covering eight migration seasons. Data were also compared with historical records from Fall 1991 to Spring 1994. This research documents a

profound decline in migratory crane populations across Punjab driven by escalating anthropogenic pressure, degradation of wetland habitats, and limited conservation awareness. Crane population characteristics pattern and occupancy are negatively influenced by environmental and anthropogenic stressors, and that increased public education investment would lead to measurable improvements in conservation awareness. Therefore, we propose the following suggestions: 1) Immediate conservation priorities include strengthened enforcement against illegal hunting, dismantling poaching networks, and enhanced surveillance. 2) Long-term strategies must focus on wetland restoration, habitat zoning, and the establishment of protected migratory corridors along the Indus Flyway. 3) Integrating community-based conservation education, citizen science, and cross-border flyway cooperation.

A200 Talk

Decadal trends in China's breeding birds: stable species richness but increasing homogenization

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Keywords: Beta-diversity, Biotic homogenization, Functional diversity, Long-term monitoring, Species turn-over, Temporal variation

China harbors rich biodiversity, yet faces the dual challenges of rapid socioeconomic development and biodiversity loss. However, the absence of a nationwide biodiversity monitoring program has left critical knowledge gaps regarding biodiversity trends in China. Using bird monitoring data collected by the China Biodiversity Observation Network from 142 sites and 864 species between 2011 and 2020, we assessed temporal trends in alpha and beta diversity at taxonomic and functional levels, and examined their drivers. Our results showed that species richness remained stable over the decade: 84.5% of monitoring sites exhibited no significant trend, and the average effect size was small. In contrast, functional richness increased significantly. Taxonomic multiple-site beta diversity declined over time, indicating emerging homogenization. In areas with pronounced precipitation seasonality and lower elevation, bird communities showed greater increases in species and functional diversity, whereas high-elevation and topographically complex regions exhibited higher species turnover. Our findings reveal asynchronous changes in taxonomic and functional diversity, as well as a decoupling between alpha- and beta-diversity trends, suggesting that locally stable species richness may mask functional diversity trends and broader-scale biotic homogenization. Thus, tracking multidimensional biodiversity trends through long-term monitoring is essential for developing targeted conservation strategies in the Anthropocene.

A201 Poster

Conservation genomics of the two subspecies of the Critically Endangered Rufous-fronted Laughingthrush *Garrulax rufifrons*

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Keywords: Conservation genomics, Captive breeding, Simulation modelling

The Rufous-fronted Laughingthrush is listed as Critically Endangered due to the illegal songbird trade. Despite its small global range, it has two distinct subspecies, one of which *G. r. slamatensis* is possibly extinct in the wild and extremely rare in captivity. Our study aims to use a conservation genomic approach to assess different breeding scenarios of *slamatensis*, including keeping the last few individuals separate or mixed with *G. r. rufifrons*. In this study, we use genome-wide SNP data from 17 individuals (16 *rufifrons* and 1 *slamatensis*) to estimate individual inbreeding coefficients and pairwise relatedness using EMIBD9.. Based on these estimates, we evaluate potential breeding strategies using minimum-kinship optimization, and assess potential genetic outcomes through simulation, to minimize inbreeding and maintain genetic diversity. By simulating genetic trends with and without *slamatensis* as a founder, we examine how its inclusion affects overall genetic diversity and inbreeding. Preliminary results identify an optimized set of breeding pairs for the current generation based on genomic relatedness. We have developed an individual-based simulation framework to evaluate the genetic consequences of different breeding strategies, comparing fully random pairing with kinship-optimized pairing across all generations, each with and without *slamatensis* as a founder.

A202 Talk

Bluetooth low-energy beacons: a novel tool for studying urban and migratory movements

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Keywords: Movement ecology, Animal tracking, Biologging, Urban ecology, Migration, GPS tagging

Movement plays a fundamental role in the ecology of animals. At larger scales, it shapes population connectivity through dispersal and underpins the ability for animals to escape unsuitable environments through nomadic and migratory movements. At smaller scales, movement determines how animals interact with resources and interface with humans in and around urban spaces. Recent evidence suggest that animal movement is highly dynamic and variable, necessitating large-scale and long-term tracking of multiple individuals and populations. However, there are major hurdles to the effective study of animal movement at meaningful spatial and population scales. First, there are significant costs associated with tag hardware as well as recovering the data. Second, battery life often limits the duration of data collection. Third, high tag costs limits the number of individuals

that are tracked and therefore how complete a picture of movements we obtain. To address these challenges, we developed Bluetooth low-energy tags that obtain and transmit data through the massive global network of mobile phones. These tags weigh <2 g and have a long battery life (or can be solar powered). By deploying tags to urban and migratory birds, we demonstrate the ability for these tags to reveal new insights into animal movements at local and migratory scales.

A203 Talk

Shared historical refugia and genetic diversity hotspots of co-distributed species on the Qinghai-Tibet Plateau

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Keywords: The Qinghai-Tibet Plateau, Co-distributed species, Population genomics, Ecological niche modelling, Glacial refugia, Genetic diversity hotspot

The Qinghai-Tibet Plateau (QTP) is a global biodiversity hotspot, yet the distribution of genetic diversity hotspots in co-distributed species remains poorly understood. Here, we integrate genomic data from three co-distributed endemic species (plateau pika and two snowfinches) on the QTP, with ecological niche models (ENMs) based on paleoclimate data to identify shared genetic diversity hotspots. Our results reveal a consistent northeast-to-southwest decline in genetic diversity, with a shared hotspot located in the northeastern QTP. ENMs further suggests that these species shared glacial refugia in this region during the Last Glacial Maximum, followed by post-glacial expansions into the central plateau, resulting in similar spatial patterns of genetic diversity. Differences in genetic differentiation, demographic history, inbreeding depression, and genetic load suggest species-specific evolutionary responses to historical climate fluctuations. Overall, our study highlights the importance of protecting hotspots of shared genetic diversity across multiple species to preserve their evolutionary potential.

A205 Talk

Detection bias in monitoring birds by camera trapping in Chinese forests: An integrated analysis of functional traits and phylogeny

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Keywords: Bird monitoring, Infrared-camera trapping, Detection bias, Functional traits, Avian phylogeny

Infrared camera trapping technology has been widely employed to monitor bird diversity. However, little is currently known about the extent to which this technique contributes to

regional bird distribution and abundance, the nature of the sampling biases inherent in such monitoring, and the functional traits that give rise to these biases. We utilised monitoring data from 91 nature reserves across China and integrated avian taxonomic, functional traits, and phylogeny. Bayesian and random forest models were employed to investigate detection bias and identify the key traits influencing the detection of birds by camera trapping. The results show that: (1) camera trapping recorded approximately 42% of China's forest bird species, with variations in detection frequency across different orders and families; specifically, the families Phasianidae, Muscicapidae, Corvidae and Leiothrichidae were detected more frequently than all other families; (2) the avian community detected by camera traps showed clear functional trait divergence, yet remained predominantly assembled by stochastic processes; (3) Bayesian and random forest models identified tarsometatarsal length and feeding behaviour were key predictors of the probability of being detected by the camera, and there was a significant interaction between the them. In particular, tarsometatarsal length (β = 0.04, 95% CI [0.02, 0.06]) and herbivory behaviour (β = 0.03, 95% CI [0.01, 0.04]) showed a positive effect, whereas vertebrate behaviour (β = −0.04, 95% CI [−0.07, −0.02]) had a negative effect, while other traits played only a minor role. These findings highlight the inherent detection biases associated with birds monitoring using camera trapping, providing a useful theoretical foundation and methodological guidance for targeted bias correction and the optimized application of camera trapping technology in bird diversity assessment.

A206 Poster

Tidal connectivity between tidal flats and hinterland habitats mediated by waterbirds in the Korean Getbol

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Keywords: Hinterland habitats, Korean Getbol, Tidal connectivity, Tidal flats, Waterbirds

Tidal flats and adjacent hinterland habitats may function as connected ecological systems for waterbirds, especially in regions with large tidal amplitudes. We examined this connectivity using waterbird survey data from Seocheon and Gochang, two major Korean Getbol World Heritage sites. Point-count data collected during spring tides were used to compare waterbird abundance and species richness between low and high tide. We also quantified species overlap between tidal flats and hinterland habitats and calculated a tidal shift index to assess high-tide displacement. Waterbird assemblages showed clear overlap between tidal flats and hinterland habitats, and many species recorded on tidal flats were also observed in adjacent hinterland areas. Abundance patterns and shift indices indicated increased hinterland use during high tide, although responses varied by season and taxonomic or feeding group. Shorebirds and shallow-water foragers tended to show stronger positive tidal shifts than swimming waterbirds. These results suggest that hinterland wetlands, agricultural fields, reservoirs, and other inland habitats serve as important high-tide

refuges. Conservation and management of Korean tidal flats should therefore consider tidal flats and their surrounding hinterland habitats as an integrated ecological unit.

A207 Poster

How do oriental Reed Warblers recognize Cuckoo eggs?

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Keywords: *Acrocephalus orientalis*, Cognitive mechanism, *Cuculus canorus*, Egg recognition, Host

Oriental Reed Warblers *Acrocephalus orientalis* are favorite hosts of Common Cuckoos *Cuculus canorus*. However, the cognitive basis and underlying mechanisms of the host egg discrimination behavior remain not well understood. In this study, we conducted egg recognition experiments using three egg mimicry levels (non, poorly, and highly mimetic eggs) to observe Oriental Reed Warbler behavior (rejection or acceptance) at three breeding stages (pre-egg-laying, single host egg, and multiple host eggs). Results showed that oriental reed warblers accepted all highly-mimetic (conspecific) eggs across all stages, while rejecting most non- and poorly mimetic eggs. Rejection rates for nonmimetic eggs were 100% in both pre-egg-laying and single-egg stages, and 86.7% in the multiple-egg stage; for poorly mimetic eggs, rejection rates were 83.3%, 70%, and 66.7%, respectively. The ability to reject foreign eggs even at the pre-egg-laying stage suggests that Oriental Reed Warblers may use a memory-based template for egg recognition, relying on innate or experientially acquired cues. However, the consistent acceptance of conspecific eggs also aligns with uncertainty-based acceptance strategies. These findings indicate that Oriental Reed Warblers employ a complex and potentially multi-mechanistic cognitive system for egg recognition.

A208 Poster

Two sides of state-dependent personality

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Keywords: Great Tit, Cognition, Winter, Personality

Animal personality is hypothesized to be maintained by state-behavior feedbacks, yet whether a given state variable consistently predicts personality across years within the same population remains unclear. We quantified exploration and boldness through standardized behavioral tests, and examining their relationships with state variables (energy reserves, immunity, parasite load) and cognitive performance across years. The results yielded consistent support for the disease-avoidance hypothesis: more parasitized individuals were less exploratory. However, the relationship between exploration and energy reserves pointed in opposite directions. For personality–cognition links, exploration was associated with inhibitory control and problem-solving, suggesting task-specific associations rather than a

general personality–cognition axis. These findings confirm that state-dependent personality exists, but reveal that a single state variable can drive personality in opposite directions, highlighting the bidirectional nature of state–behavior feedbacks.

A209 Talk

Interspecific variation in shorebird population trends in relation to migration stopover habitat

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Keywords: Population trends, Migration ecology, Protected area, Migratory species, Coastal wetland, Inland wetlands

Migration is a vital survival strategy for many species, but the increasing interruption of migratory routes by human activities has placed migratory shorebirds at high risk of extinction, particularly in Asia. Bangladesh, positioned at the crossroads of the Central Asian and East Asian-Australasian Flyways, is a critical region for shorebird migration and for understanding anthropogenic impacts on migratory populations. Here we use 14 years of shorebird surveys and satellite tracking to investigate potential correlates of interspecific variation in shorebird population trends in Bangladesh. We find that 12 out of 20 shorebird species studied experienced population declines in 2009–2023. Coastal habitat obligates (e.g. Spoon-billed Sandpiper) showed the largest decreases. In contrast, several non-coastal obligate species (e.g. Tibetan Sand Plover) exhibited stable or increasing trends. Migration stopover habitat emerged as the primary factor predicting population trends. Our results emphasise the critical importance of previously overlooked inland stopover sites, particularly in the Qinghai-Tibet Plateau, where 64% of sites used by tracked birds are unprotected. Conserving coastal wetlands is vital to the conservation of Asia's shorebirds, but so too is the protection of stopover areas inland.

A210 Talk

Using mobile applications for vulture monitoring: first data obtained with Wing Watcher in Nepal (2024–2025)

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Keywords: Vulture, Wing Watcher, Citizen scientist

Nepal is recognized as a key hotspot for vulture conservation, hosting all nine species recorded in South Asia. To assess their current status and establish a system for regular monitoring, we used the mobile application Wing Watcher to record population counts across the country. The application allows users to upload locations, age classes, and behaviors (feeding, soaring, roosting), with species identification aided by the field

guide Vultures of Nepal. Images uploaded were verified by experts either virtually or in person. A total of 198 users participated in the monitoring, which was conducted simultaneously between 08:00 and 11:00 am, with 63 checklists ultimately approved: 44 from Gandaki Province, 9 from Lumbini, 4 from Sudurpaschim, and 6 from Bagmati. Participants included citizen scientists, students, researchers, government officials, and birdwatching professionals. Surveys were conducted in 2024 (September, October, and November) and 2025 (January). Altogether, 1,237 individuals were recorded in September, 1,110 in October, 1,983 in November, and 1,242 in January, representing all nine species from 63 sites. November 2024 recorded the highest number. The most frequent species observed was the Egyptian Vulture. The initiative demonstrates the effectiveness of participatory, technology-driven monitoring in Nepal.

A212 Talk

Mercury pollution in birds migrating between China and Russia

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Keywords: Mercury pollution, Migratory birds, China-Russia flyways, MeHg contamination, Waterfowl, Shorebirds

Mercury (Hg), especially its organic form methylmercury (MeHg), is a global pollutant that readily enters organisms through the diet and can adversely affect health and reproduction. Wetlands are major mercury reservoirs due to intensive mercury accumulation. Migratory birds can transport mercury along their migratory routes. Feathers are particularly useful for biomonitoring due to their metabolic inertness once formed, minimally invasive collection, and ease of storage. To investigate mercury contamination in migratory birds, we are conducting a joint large-scale Russian-Chinese study covering breeding areas in Russia, wintering grounds in China, and migratory stopovers in both countries along the Central Asian, East Asian-Australasian, and West Asian-East African flyways. We present the first results on mercury levels in feathers, blood, and internal organs (liver, kidneys, muscles) of migratory birds throughout their annual cycle to assess current exposure to Hg and MeHg and the spatial distribution of mercury accumulation across the three flyways linking Russia and China. Our research focuses primarily on waterfowl and shorebirds, which are at particularly high risk of MeHg contamination. The results will help identify the main threats of mercury pollution to key bird species along the China-Russia flyways.

A213 Talk

Proactive vs. reactive multi-brooding: divergent drivers of double brooding and replacement clutching in varied tits

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Keywords: Multiple brooding, Double brooding, Replacement clutches, Date hypothesis, Quality hypothesis

Multibrooding is a common avian reproductive strategy in which individuals produce multiple broods within a single breeding season. Theoretically, this behavior enhances fitness by maximizing reproductive output under favorable conditions. However, within a species, not all individuals adopt this tactic, prompting questions about the factors motivating multiple breeding attempts. In this study, we investigated the ecological and individual factors influencing the initiation of second clutches in the Varied Tit *Sittiparus varius*, a species capable of multibrooding. We explicitly distinguished between replacement clutches and true second clutches (double brooding) to identify their distinct drivers. Our results indicated that double brooding was a proactive strategy primarily driven by an earlier first egg-laying date. Path analysis further showed that the effect of age on double brooding was entirely indirect, mediated through earlier breeding phenology. In contrast, replacement clutching following nest failure was a reactive, time-constrained tactic, associated with an earlier nest failure date and heavier average egg mass in the initial failed clutch. Once a second breeding attempt was initiated, both strategies exhibited convergent adjustments in clutch size, highlighting the late-season environmental constraints on breeding decisions.

A214 Talk

Using remote sensing methods for estimation nesting density of Barnacle Geese

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Keywords: Remote sensing, Arctic, Barnacle Geese, UAV, Nesting density

Barnacle Geese are an Arctic-nesting goose species whose numbers have increased dramatically in recent decades. This expansion has led to a widening of the breeding range and the establishment of new colonies in previously unoccupied habitats, including the largest known colony on Kolguev Island, estimating the abundance of which involves methodological and logistical challenges. In 2023, an unmanned aerial vehicle (UAV) survey using DJI quadcopters (Mavic Pro, Mavic 2 Pro, Air 2, and Mini 2) was conducted from an altitude of 40 m above ground level to obtain an accurate estimate of colony size. The survey included continuous coverage of 10 km^2 and transect surveys across the entire colony to determine its boundaries. Ground survey plots with all nests mapped were used to validate nest identification in the UAV imagery. A total of 21,300 barnacle goose nests were identified and mapped from the imagery. A habitat map was compiled using vegetation map, morphometric characteristics, spectral bands from a summer Sentinel-2 image, and

vegetation indices. Nesting density was calculated for identified habitats and extrapolated to unsurveyed areas. The total colony size was estimated at 100,324 nests across 83.72 km². The study was funded by the Russian Science Foundation (RSF) project 22-17-00168-P.

A215 Talk

Population genomics of the two widely distributed passerines across the Qinghai-Tibet Plateau

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Keywords: Population genomics, Historical demography, Qinghai-Tibet Plateau, Ecological niche modeling, Pleistocene glaciation

Harsh climatic conditions print common genomic signatures across species, while sympatric species with different evolutionary and biologic context may adopt variable strategies. To assess the internal and external factors in shaping the population genomics across Qinghai-Tibet Plateau, we integrated de novo genome sequencing, population genomic resequencing, ecological niche modeling and morphological analyses for the two passerines, Black Redstart *Phoenicurus ochruros* and Horned Lark *Eremophila alpestris*. Genome-wide low diversity and shallow differentiation were record in both species. Genetic diversity hotspot is in the west for BR but in the northeast QTP for HL. A longitudinal genetic cline and IBD mode in the BR is not consistent with the HL, in which the IBE mode was recorded. The gene annotation results for those lineage differentiated regions are also varied by species, with neural pathways enriched in the BR but developmental and tissue-homeostasis pathways in the HL. We also detected large chromosomal inversions in the HL, harboring genes associated with cardiovascular function. All these findings imply a general pattern of low genome-wide genetic diversity and shallow structure across in highland populations across QTP, while the species-specific ecological needs and evolutionary context have casted in isolation modes, genomic regions and relevant pathways related to environment adaption.

A216 Poster

Preliminary insights into the community composition and migration patterns of migratory raptors at Baiwangshan, Beijing

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Keywords: Raptor migration, Raptor monitoring, Migration patterns, Baiwangshan, Beijing, Flyway

Baiwangshan, along the East Asian–Australasian Flyway, is an important raptor passage site where migration patterns remain poorly understood. Systematic monitoring of migratory raptors was conducted at Baiwangshan, Beijing, during the spring (12 March–3 June) and autumn (23 August–3 November) migration seasons of 2025 (≥8 h/day), providing preliminary insights into raptor migration patterns in this area. A total of 26,655 individuals representing 34 raptor species were recorded. Crested Honey Buzzard *Pernis ptilorhynchus* and Eastern Buzzard *Buteo japonicus* were the dominant species (relative abundance, RA > 15%). The records included five nationally protected Class I species in China and the first Beijing record of Rufous-bellied Eagle *Lophotriorchis kienerii*. No significant difference in raptor diversity was detected between the two migration seasons ($p > 0.05$), both exhibiting high species richness and low evenness. Spring migration showed greater daily fluctuations than autumn; daily migration peaks were observed between 08:00–11:00 and 09:00–14:00, respectively. Major species (RA ≥ 1%) exhibited contrasting seasonal migration phenologies. Average flight altitude ranged from 190 to 510 m. These findings further highlight the value of Baiwangshan as a key raptor passage site, while long-term monitoring is still required to support future research and conservation efforts.

A217 Poster

When puncturing fails: nest desertion as an alternative egg rejection strategy in the Oriental Reed Warbler *Acrocephalus orientalis*

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Keywords: Cuckoo parasitism, Oriental Reed Warbler, Nest desert, Physical limitation hypothesis, Rejection error, Egg rejection

Egg recognition and ejection are key defenses against avian brood parasitism, yet host rejection strategies vary within and among species. The Oriental Reed Warbler *Acrocephalus orientalis*, a common host of the Common Cuckoo *Cuculus canorus*, typically rejects parasitic eggs by puncture ejection, although some individuals resort to nest desertion, a more costly strategy. We tested why hosts adopt different rejection strategies and hypothesized that desertion occurs when hosts recognize parasitic eggs but are physically unable to eject them. We conducted experiments using red-painted real Rose-faced Lovebird *Agapornis roseicollis* eggs (puncturable) and artificial model eggs (unpuncturable). Warblers showed similarly high recognition and rejection rates toward both egg types. However, nest desertion occurred significantly more often in response to model eggs, whereas ejection dominated for real eggs. Ejection errors were also more frequent with model eggs. Neither the number of remaining host eggs nor ejection errors explained variation in desertion, suggesting that desertion was not driven by reduced clutch value following egg loss. These findings provide direct support for the physical limitation hypothesis and demonstrate that nest desertion can function as an alternative rejection strategy when hosts recognize foreign eggs but cannot physically remove them.

A218 Poster

Imperfect detection biases β diversity estimates based on whether species are shared between sites

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Keywords: Birds, Functional β diversity, Imperfect detection, Island biogeography, Phylogenetic β diversity, Shared species

β diversity measures the variation of species composition among sites that is a key component of biodiversity measurement. However, it remains unclear how imperfect detection, a common form of sampling error, affects the estimates of β diversity. Here we simulated the processes of imperfect detection based on species' compositional statuses (i.e. shared species between two assemblages, or unique species only belonging to one assemblage), and used a 10-year avian monitoring dataset collected on 36 subtropical reservoir islands to examine how imperfect detection affects β diversity estimates as a function of island area and isolation. Both simulation and empirical analyses found that imperfect detection overestimated taxonomic, functional, and phylogenetic β diversity due to biased observations of shared species. The extent of overestimation in avian β diversity increased with the difference in island area. Our study reveals a general mechanism of understanding β diversity estimates under imperfect detection through species compositional status.

A219 Poster

Avian lung single-cell atlas elucidates evolutionary divergence in endothermic respiration

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Keywords: Single-cell RNA-sequencing, Avian lung, Cross-species comparison

The evolution of distinct lung architectures in birds (tubular air capillaries) and mammals (alveoli) represents a classic example of convergent evolution, yet their cellular differences remain poorly characterized. We present the comparative single-cell atlas of avian and mammalian lungs, revealing four key findings. First, we discover a persistent hybrid cell population (AT1/AT2) in neonatal and adult birds that disappears postnatally in mice, uncovering distinct strategies for lung maintenance. Second, cross-species comparisons highlight striking divergence in alveolar cell types, reflecting specialized adaptations to different respiratory demands. Third, avian lungs show unique molecular signatures

in proliferation and saccular development pathways, potentially explaining their superior respiratory efficiency. Fourth, our viral receptor analysis uncovered differential ACE2 (SARS-CoV-2 receptor) expression but conserved EGFR (influenza A receptor), suggesting species-specific disease vulnerabilities. This work provides unprecedented insights into the evolutionary and developmental mechanisms shaping lung diversity in endotherms, with implications for respiratory biology, regenerative medicine, and zoonotic disease research.

A220 Talk

Multidimensional strategies of urban adaptation in birds: metabolism, brain plasticity, and communication trade-offs

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Keywords: Acoustic communication, Behavioral adaptation, Eurasian Tree Sparrow, Metabolic flexibility, Neural plasticity

Urbanization imposes multiple ecological stressors on birds, yet how urban exploiters persist through coordinated physiological, sensory, neural, and behavioral adjustments remains unclear. Using the Eurasian Tree Sparrow Passer montanus as a model, we compared urban and rural populations across physiological, sensory, neurobiological, and behavioral traits. Urban sparrows showed marked metabolic reprogramming during the pre-breeding stage, with elevated free fatty acids, β-hydroxybutyrate, total cholesterol, but reduced glucose, triglycerides, and fat reserves, suggesting a shift toward lipid-based energy use. Although body condition, corticosterone, and most oxidative markers were broadly maintained, altered antioxidant responses indicate persistent but buffered physiological stress. Urban sparrows also exhibited greater boldness, sociability, and cognitive performance, supported by enhanced neuronal density, adult neurogenesis, oxytocinergic signaling, dendritic spines, synapses, and synaptic efficiency in brain regions related to learning, memory, and decision-making. In noisy urban soundscapes, sparrows increased song frequency and amplitude, indicating vocal compensation. However, reduced auditory brainstem responses, cochlear hair-cell damage, and decreased neurogenic investment in auditory regions revealed a production–reception mismatch, whereby enhanced signal output is accompanied by impaired sensory reception. Together, these findings show that avian urban adaptation involves metabolic flexibility, behavioral innovation, neural plasticity, and vocal compensation, while also revealing hidden physiological and sensory costs.

A221 Poster

Conservation genomics of two Endangered buntings reveal genetic diversity before and after severe population declines

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Keywords: Museomics, Genetic diversity, *Emberiza*

Museomics utilizes historical genetic data from museum specimens to inform threatened species conservation. The Yellow-breasted Bunting *Emberiza aureola* and the Jankowski's Bunting *E. jankowskii*, categorized as Critically Endangered or Endangered, respectively, have experienced population declines since the 1970s–1980s. Comparing genetic diversity changes before and after declines is crucial for refining conservation strategies. We resequenced 29 *E. aureola* (16 historical pre-decline specimens from the 1930s to the 1950s) and 18 *E. jankowskii* (4 historical pre-decline specimens from the 1950s to the 1960s), with 45 individuals from six least-concern *Emberiza* species for comparison. Genetic diversity remained stable in both Endangered species from the pre-decline to post-decline periods, with their overall genetic diversity levels being comparable to those of their least-concern congeners. While historically, both had large effective population sizes, *E. jankowskii* showed a gradual decline over 1,000 generations, whereas *E. aureola* remained stable. Both modern populations of *E. aureola* and *E. jankowskii* exhibited a higher proportion of long runs of homozygosity (ROH) compared to their historical counterparts, indicating an increased impact of inbreeding following population declines. Despite severe population declines, both species retained high genetic diversity but experienced increased inbreeding. *E. jankowskii* faces ongoing effective population size decline.

A222 Talk

Can urban greening buffer the impacts of climate warming on bird diversity? Evidence for biogeographic limits from Chinese cities

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Keywords: Urbanization, Urban greening, Bird diversity, Climate warming, Biogeography boundary, Functional traits

Urbanization can strongly filter bird assemblages, but whether urban greening can buffer biodiversity losses under climate warming remains unclear at broad spatial scales. Here, we examined 177 Chinese cities using bird occurrence records from multiple citizen science platforms between 2003 and 2023. We compared bird species richness between built-up and non-urban areas to quantify urban filtering, and integrated climate, urban green space and bird functional traits to assess how warming and greening jointly shape urban bird diversity across biogeographic regions. Built-up areas retained, on average, only about half of the bird species recorded in surrounding non-urban areas, indicating strong urban filtering. However, this filtering was not spatially uniform. Cities in the Palaearctic realm were more strongly constrained by climate warming and showed greater risks of future richness loss, whereas cities in the Oriental realm were more likely to gain biodiversity benefits from urban green-space expansion. Bird functional traits further mediated species responses to warming and greening, suggesting that urban biodiversity responses depend on both city-level environments and species ecological strategies.

A223 Talk

Animal personality influences the speed-accuracy tradeoff in decision making in Budgerigars *Melopsittacus undulatus*

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Keywords: Decision making, Speed-accuracy tradeoff, Animal personality, Budgerigars

Animals often face a speed-accuracy trade-off (SAT) when making decisions, where rapid decisions may increase errors while slower decisions improve accuracy. The cognitive style hypothesis predicts that personality influences this trade-off, with proactive individuals favoring speed and reactive individuals prioritizing accuracy. However, evidence remains mixed, and few studies have examined SAT in ecologically relevant contexts. We investigated personality and SAT in captive Budgerigars *Melopsittacus undulatus*, measuring exploration, activity, aggressiveness, and boldness through repeated personality assays. A binary food-choice task under varying food probabilities and competitive conditions was used to quantify decision speed and accuracy. Budgerigars showed consistent individual differences in all four personality traits, confirming animal personality. However, traits were unrelated to sex, body size, brain volume, or one another, indicating no behavioral syndrome. Significant speed-accuracy relationships were detected both within and among individuals, but with differing patterns, suggesting distinct underlying mechanisms. Additionally, we found that highly exploratory and active individuals made faster but less accurate decisions. This effect emerged only under simulated competition, indicating that personality effects on SAT are context dependent. We suggest that such context dependence may help maintain personality variation in animal populations.

A224 Talk

Research on wintering population survey methods of Whooper Swans based on UAV and YOLOv5

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Keywords: UAV monitoring, Deep learning, Artificial feeding, Spatial distribution, Wintering waterbirds, Whooper Swan

Migratory waterbirds indicate wetland ecosystem health, yet traditional ground surveys cannot quantify fine-scale spatial distributions or assess how human interventions reshape habitat use. Lightweight unmanned aerial vehicles (UAVs) and deep learning offer solutions, but encounter challenges including low proportion of effective targets in aerial images,

double counting of mobile individuals, and recognition confusion from similar interfering objects. We integrated low-overlap UAV aerial photography with a YOLOv5 detection pipeline to survey Whooper Swan *Cygnus cygnus* wintering populations across five lakes with contrasting management regimes in Sanmenxia, China. A geospatial deduplication algorithm replaced orthomosaic-based approaches to eliminate double-counting of mobile individuals. Semi-automatic annotation with negative-sample augmentation yielded mAP@0.5 = 0.976, and automated counting outperformed manual interpretation in accuracy and stability. Most notably, swans exhibited fundamentally different distributions between fed and unfed wetlands: individuals in artificially fed lakes concentrated near shore (median relative distance 0.074–0.186), whereas those in unfed wetlands occupied central areas (0.448; $H = 2061.97$, $p < 0.001$). This demonstrates that artificial supplementary feeding is a dominant driver reshaping swan distribution, with implications for disease transmission at high-density aggregation sites. Our approach provides an efficient, low-disturbance tool for fine-scale waterbird monitoring and evidence-based wetland management.

A225 Talk

Population recovery of Green Peafowl *Pavo muticus* in China and its 2025 national monitoring

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Keywords: Green Peafowl, Conservation, Non protected areas, Infrared camera, National monitoring

Green Peafowl *Pavo muticus* is under the first-class national protection in China. Its wild population in China declined to approximately 500 individuals around 2017–2018, with a distribution restricted to Yunnan Province, and concentrated in the river valleys of the middle and upper reaches of the Yuanjiang River Basin. In 2023, the population size of Green Peafowl in China was less than 900 individuals, and more than half of the total population occurred outside protected areas. This study conducted a comprehensive survey of Green Peafowl in Yunnan Province, China in 2025 (February–November), covering 13 monitoring plots (five protected areas (PA) and seven non-PA) with a total area of 405 km^2. Three survey methods were applied: infrared camera trapping, acoustic monitoring, and traditional line-transect surveys. In total, 1,105 infrared cameras and 140 passive acoustic monitors were deployed. The results show that in China the Green Peafowl population reached about 1,200 individuals in 2025, reflecting effective conservation outcomes for the species. In addition, infrared camera data recorded 84 bird species and 20 mammal species sympatric with Green Peafowl. Besides, we also describe the conservation efforts from administrators and local people, especially in non-protected areas.

A226 Talk

Distinct bird–window collision patterns in Taiwan: insights from a decade of citizen science and social media records

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Keywords: Bird-window collision, Vulnerability, Super collider, Rarefaction analysis, Subtropic, Island

Bird–window collisions (BWC) are a major source of human-induced avian mortality worldwide, yet current understanding is based largely on studies from temperate regions, particularly North America. Existing paradigms emphasize collisions involving nocturnal migratory passerines during spring and autumn and have informed mitigation strategies focused on artificial lighting and passerine biology (e.g. Lights Out programs and UV window markings). Whether these patterns and solutions apply elsewhere remains unclear. Here, we present the first assessment of BWC in Taiwan. Using citizen science reports and social media records, we compiled a decade-long dataset of >3,500 collision cases involving at least 172 species. Rarefaction analysis indicated that the dataset captured >95% of the estimated colliding species. Unlike patterns reported from North America, collisions in Taiwan showed limited seasonal variation, with winter recording the highest frequency. The most collision-vulnerable species were predominantly non-passerines, particularly members of Megalaimidae, Columbidae, Accipitridae, and Alcedinidae. Taiwan Barbet *Psilopogon nuchalis*, Emerald Dove *Chalcophaps indica*, and Crested Goshawk *Lophospiza trivirgata* emerged as the most collision-prone species. These findings suggest that bird–window collision dynamics and associated mitigation strategies may not be universally transferable across regions and highlight the aforementioned method as a scalable approach for documenting BWC and informing conservation policy.

A228 Talk

Genomic discordance and diversification in the White-rumped Shama *Copsychus malabaricus* complex

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Keywords: Population genomics, Admixture, Gene flow, Speciation, Southeast Asia

Hybridization and gene flow are increasingly recognized as important processes shaping diversification, particularly in Southeast Asia. The White-rumped Shama *Copsychus malabaricus* complex, a widespread group of passerines across continental and insular Southeast Asia, provides an ideal system to investigate how divergence, dispersal and

introgression interact. We use genome-wide SNP data to explore population structure and phylogenetic relationships within the complex. Analyses including 16 taxa (species and subspecies) across the complex suggest widespread signals of gene flow. Population genomic analyses focused on the taxon *ngae*, extinct in the wild, reveal that *C. m. ngae* harbors ancestry components shared with both Andaman Shama *Copsychus albiventris* and the continental clade (*Copsychus malabaricus*). Conversely, phylogenetic reconstructions place *ngae* closer to *albiventris*, highlighting discordance between genomic ancestry and tree-based relationships. This pattern is notable in light of regional biogeography. While Sundaland experienced repeated land connections during Pleistocene sea-level lowstands, the Andaman Islands remained isolated by deep marine barriers. Shared genomic signals are therefore unlikely to reflect simple historical connectivity, and instead point to alternative evolutionary processes, including retention of ancestral polymorphism and historical gene flow. Ongoing analyses aim to disentangle these processes and clarify how genomic and biogeographic discordance has shaped diversification in this complex.

A230 Poster

How birds defend their nests: defensive strategies of *Hirundo daurica* against nest usurpation by *Passer montanus*

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Keywords: Red-rumped Swallow, Tree Sparrow, Nest Usurpation, Defensive strategy

The Red-rumped Swallow *Hirundo daurica* and the Tree Sparrow *Passer montanus* are both cavity-nesting bird species that compete intensively for limited nest-site resources. This study investigated nest usurpation by Tree Sparrows against Red-rumped Swallows in Zhalong Town, Qiqihar. Results showed that nest usurpation was highly prevalent and had caused significant negative impacts on the reproductive success of Red-rumped Swallows. To improve their reproductive fitness, Red-rumped Swallows exhibited three primary defensive strategies: 1) active expulsion of intruders; 2) colonial nesting for collective defense; and 3) nesting inside human buildings to gain protection from human presence. This study is the first to systematically report the widespread nest usurpation by tree sparrows on Red-rumped Swallows. We analyzed behavioral responses of swallows from an anti-usurpation perspective, summarized key defensive strategies ensuring breeding success, and revealed the dynamic game relationship between nest usurpation and anti-usurpation. These findings provide a typical model for studies on species coevolution.

A231 Talk

Disentangling seasonality and environmental drivers: water level and riparian afforestation shape long-term trends of waterbirds in the largest reservoir in North China

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Keywords: Waterbird, Reservoir, Water level, Afforestation

Reservoirs can provide important habitats for birds amid widespread loss and degradation of natural wetlands. Identifying management factors associated with bird diversity is therefore essential for evaluating the conservation value of artificial wetlands. Using six years of monthly bird surveys collected through a citizen science programme, we examined community composition and long-term trends of birds in Miyun Reservoir and assessed how reservoir management influenced habitat use. Volunteers recorded 92 waterbird species, and community composition showed strong seasonal variation. During the study period, the relative abundance of ducks, cranes, herons, avocets, and pratincoles declined, whereas cormorants and rails increased. After accounting for seasonal dynamics, water level and riparian vegetation were identified as the main drivers of long-term community change. Increasing water levels reduced the relative abundance of most waterbird groups, except rails and cranes. Afforestation of mudflats decreased the relative abundance of ducks and cranes but increased that of herons and cormorants. Submerged woodland was associated with declines in cormorants, rails, and herons. These findings demonstrate that interactions between water level and riparian vegetation strongly shape long-term waterbird dynamics. Long-term citizen science monitoring can reveal priority species and habitat requirements at local scales, providing a scientific basis for biodiversity-friendly reservoir management.

A232 Poster

Mapping resource–risk landscapes to identify priority areas for vulture conservation in central India

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Keywords: Vulture conservation, Conservation hotspots, Risk–Resource Index, Spatial risk analysis, Central India, Anthropogenic threats

Rapid infrastructure expansion across South Asia is intensifying risks for vultures, a group already facing severe population declines. Identifying where critical resources overlap with anthropogenic threats is important for directing effective conservation action. The study presents a spatial framework to prioritise vulture conservation areas in central India using multi-year survey data from Madhya Pradesh. Key ecological resources, including nesting, roosting and feeding sites, are mapped alongside landscape features such as water bodies and livestock shelters. Major infrastructure elements, including roads, railways and powerlines, are incorporated to represent potential mortality and disturbance. Vulture observations are used to generate a density surface highlighting areas of concentrated use. Hotspot zones cover approximately 0.29% of Madhya Pradesh's total geographical area, indicating highly localised spatial clustering. These components are integrated into a Vulture Risk–Resource Index, which classifies landscapes into priority zones based on the co-

occurrence of resources, risks, and species use. This approach identifies critical habitats that remain relatively secure, as well as high-conflict areas where important vulture sites intersect with infrastructure. By linking species distribution with risk exposure, the framework aims to provide a practical tool for management and planning, enabling targeted mitigation and field-based conservation decisions for vultures in rapidly changing landscapes.

A233 Poster

Vertical and horizontal habitat utilization among avifauna in the Dambulla Kaludiyapokuna Forest Reserve, Sri Lanka

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Keywords: Avian diversity, Habitat utilization, Biodiversity conservation, Sri Lanka

The Kaludiya Pokuna Forest Reserve (KFR), a 13 km² semi-evergreen forest in the intermediate zone of Matale District, Sri Lanka, remains poorly studied despite low human disturbance. This study presents the first assessment of horizontal habitat utilization and vertical stratification of avifauna in KFR, providing insights for conservation planning. Bird surveys were conducted from October to December 2023 using line transects across three habitat types: aquatic, disturbed, and forest areas. The iNEXT 4-step method and UpSetR were used for the analysis. A total of 96 species, including eight endemic species, were recorded. Species richness was highest in the aquatic habitat (73 species), followed by disturbed (56) and forest (51) areas. Habitat association analysis showed that 22.91% of species were restricted to aquatic habitats, while fewer species were confined exclusively to forest (8.33%) and disturbed areas (4.16%). Additionally, 25% of species occurred across all habitats. Vertical stratification indicated clear niche partitioning, with the highest overlap between ground and sub-canopy layers (45 species), while 36 species were restricted to ground. The dominance of breeding resident species in aquatic habitats highlights their importance for resource availability and nesting. Overall, KFR plays a significant role in supporting avian diversity and warrants continued conservation attention.

A235 Poster

Dynamics of waterbird community diversity in natural-artificial composite wetlands in lakeshore under extreme climatic conditions

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Keywords: Extreme weather, Functional diversity, Lakeshore, Natural-artificial composite wetland

Extreme weather threatens ecosystem stability and biodiversity. Lakeshore natural-artificial composite wetlands maintain waterbird diversity. We hypothesize that extreme weather alters the habitat quality of natural wetlands, while artificial wetlands, as alternative habitats, play a positive role in maintaining waterbird diversity on the lakeshore. We collected waterbird data from lakes, fishponds, and paddy fields during the 2020–2021 (flood), 2021–2022 (normal), and 2022–2023 (drought) periods. Based on functional diversity, we quantified the impact of extreme climate on waterbird communities on the lakeshore. Results showed that the functional diversity and dissimilarity of waterbird communities in lakes were significantly higher in normal than in flood and drought years. Conversely, the functional diversity and dissimilarity in fishponds and paddy fields were lowest in normal years. Functional dissimilarity of waterbird communities in lakes and fishponds, as well as between lakes and paddy fields, was highest in normal years. In normal years the lakeshore waterbird community was primarily composed of nestedness components, whereas in flood and drought years, was primarily composed of turnover components. The study emphasized the importance of artificial wetlands in maintaining waterbird diversity during periods of extreme climate, and provided important evidence for the management of lakeshore wetlands.

A236 Talk

Spatial match and mismatch: hydrological regulation decouples habitat suitability from abundance distribution in threatened Hooded Crane *Grus monacha*

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Keywords: Abundance distribution model, Floodplain wetland, *Grus monacha*, Habitat-distribution mismatch, Hydrological threshold, Species distribution model

Large-scale water-level regulation forces wintering waterbirds out of habitats that habitat-suitability models predict should support them. We integrated ensemble of small habitat-suitability models with a transfer-learning abundance model to define a habitat-distribution mismatch index (HDMI) for the Vulnerable *Grus monacha* wintering at Caizi Lake, a gate-controlled lake on the Yangtze floodplain and a key node of the Yangtze-to-Huaihe Water Diversion Project (YHWDP). Using seven annual surveys (2019–2025), we cross-tabulated predicted suitability and abundance to identify Matched, Potential, Mismatched, and Unsuitable habitat, and modelled the proportion of the population in mismatched habitat. The mismatched population increased with water level (pseudo-R2 = 0.94, P = 0.003), with a 1.18-m logistic transition window from 7.60 m (WL10) to 8.78 m (WL90). Centered on a midpoint of 8.19 m (WL50), with more than half of predicted abundance fell into low-suitability farmland and lake-edge habitats. The planned 2030 minimum winter water level of 7.50 m sits at the lower boundary of the transition window and the 2040 target of 8.10 m falls within it, so the YHWDP is expected to displace most wintering *G. monacha* from

suitable habitat. We recommend management actions as keeping water levels below 7.60 m and revise the 2040 target.

A237 Poster

Local observations, broader insights: seasonal bird assemblages in a peri-urban landscape of the Terai-Bhabar region, Uttarakhand, India

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Keywords: Bird assemblages, Longitudinal monitoring, Migratory phenology, Peri-urban ecology, Seasonal turnover, Landscape heterogeneity

Peri-urban landscapes are increasingly important for biodiversity, yet their role in supporting bird communities remains poorly documented at local scales. Since July 2024, birds have been monitored daily from a fixed vantage point on a terrace within a peri-urban landscape in Uttarakhand, India. The study area comprises a heterogeneous mosaic of residential structures, private gardens, a plant nursery, and remnant agricultural patches situated near a teak plantation and a riverbed. Repeated count-based observations are conducted primarily during evening hours, ranging from 15 to 45 minutes. Preliminary observations document 100 bird species across seasons. The assemblage includes resident, transient, and migratory species, with marked seasonal turnover during winter. Recurring patterns of seasonal arrival and departure highlight the importance of sustained monitoring for documenting local phenology. Although not all species appear to depend on the landscape for year-round occupancy, observations suggest that its heterogeneous habitat features facilitate avian use throughout the annual cycle. This ongoing longitudinal dataset demonstrates how consistent local-scale monitoring can reveal meaningful ecological patterns within human-dominated landscapes. The study highlights the contribution of small, peri-urban spaces to seasonal avian use and underscores the value of repeated observations in understanding bird assemblage dynamics in the Terai-Bhabar region.

A238 Talk

Mitigating effects of nest structure on predation risk in Hainan Partridge *Arborophila ardens*

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Keywords: *Arborophila ardens*, Artificial nest, Camera trap, Nest predation, Nest structure

Nest predation, the main cause of breeding failure in tropical birds, may be reduced by enclosed nests that disrupt predator search efficiency, but effectiveness varies with conditions. We tested whether the arched cover of Hainan Partridge *Arborophila ardens* nests reduces predation risk by disrupting search efficiency, and compared predation between inside and outside Hainan Tropical Rainforest National Park. In April–June 2025, we deployed 204 artificial partridge nests with pigeon eggs at four sites inside and outside the park, monitored by cameras, and compared predation rates between covered and open nests to identify predators. The uncovered nests had significantly higher predation than covered nests (62.75% vs. 46.08%; $\chi^2 = 6.00$, $p = 0.0143$). However, the anti-predation effect of covers differed between park interior and exterior (45.8% vs. 66.7%, $\chi^2 = 9.02$, $p = 0.0027$). Primary predators were birds and murid rodents, followed by mammals and the reptile. These findings reveal functional limitations of nest structure against diverse predators and show how conservation management affects predation risk, offering insights into reproductive strategy–survival trade-offs in tropical pheasants.

A239 Talk

Comparing potential biodiversity conflicts from renewable energy expansion in China at different centralization levels

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Keywords: Renewable energy, Functional diversity, Habitat, AOH

The rapid deployment of renewable energy creates urgent trade-offs with biodiversity conservation. The uneven distribution of renewable energy potential and biodiversity creates a critical governance challenge: at which administrative level should goal setting and spatial planning decisions be set to best mitigate these conflicts? Here we model the expansion of solar and wind energy in China through 2060 to reach its carbon neutrality goal, to compare a centralized national planning scenario against the current provincial (more decentralized) planning approach. We find that national sitings' spatial conflict with richness-based conservation priorities of birds and other vertebrate species is 4–7% less and overlaps 11–33% fewer species on average than the provincial planning. However, these gains are offset by greater conflicts with functional diversity and with open or dry biomes, including associated species such as the endangered Steppe Eagle *Aquila nipalensis*. By contrast, decentralized planning disproportionately overlapped more with the habitats of small-ranged forest species. Such divergence reveals the limitations of any single governance level in addressing these trade-offs, showing the imperative for integrated, multilevel siting frameworks. Effectively meeting dual climate and biodiversity targets requires strategies that synthesize strengths across administrative scales.

A240 Talk

Supertramps defy the classical model of allopatric speciation in small-island environments

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Keywords: Evolutionary genomics, Gene flow, Island biogeography, Avian genomics, Supertramps, Next-generation sequencing

The allopatric model of speciation, which requires reproductive isolation between nascent species, is widely accepted. Jared Diamond's (1974) 'supertramps'—insular species found across island archipelagos but usually absent from larger landmasses—pose an evolutionary conundrum because high dispersal should prevent any incipient differentiation from their mainland ancestors. To investigate the emergence of supertramps, we analyzed whole-genomes of 240 individuals across 15 bird species from the Malay Peninsula, Sumatra, and small islands off western Sumatra in the Sunda Archipelago. We found that highly dispersive frugivores fit a neutral colonization model with ongoing gene flow, whereas less-dispersive insectivores diverged from mainland populations to form monophyletic island lineages. These less-dispersive lineages persist despite frequent small-island extinctions because increased dispersal in these populations enables repeated recolonization. Our results show that, in some cases, speciation in island systems can be driven by an increase—not a decrease—in dispersal potential in newly formed lineages.

A241 Talk

Coping with urbanization: immune adaptation and gut microbiota-derived metabolic regulation in Eurasian Tree Sparrows

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Keywords: Urbanization, Gut microbiota, Metabolite, Immune function, Eurasian Tree Sparrow, Chicken

Immune adaptation is crucial for animals coping with urbanization, and gut microbiota-derived metabolites play important roles in immune regulation. However, the mechanisms linking gut microbiota, metabolism, and avian immune adaptation to urban environments remain poorly understood. Here, we used the Eurasian Tree Sparrow (ETS, *Passer montanus*) as a model to compare immune indicators between urban and rural populations and applied 16S rRNA sequencing and metabolomics to identify key gut microbiota and their metabolites associated with immune regulation. We found that plasma immunological indices, including haptoglobin (HP), immunoglobulin A (IgA), and interleukin-6 (IL-6), were significantly reduced in ETSs compared with rural conspecifics. Integrated microbiome-metabolome analyses identified several key bacterial taxa, including *Terrisporobacter*, *Catellicoccus*, *Clostridiumsensu_stricto_1*, *Corynebacterium,* and *Pantoea*, whose associated metabolites were mainly involved in tryptophan, histidine, glycerolipid, and glycerophospholipid metabolism and were closely linked to host immune function. We further validated the immunomodulatory effects of selected bacteria in chickens *Gallus gallus* and found that *Corynebacterium pseudodiphtheriticum* and *Catellicoccus marimmalium* significantly enhanced immune function, as indicated by increased HP, IgA, IL-6, and CH50 levels. Overall, this study reveals gut microbiota-derived metabolic regulation as an important mechanism underlying avian immune adaptation to urbanization, providing new insight into the eco-immunological strategies of urban wildlife.

A242 Poster

Duet or not: social context shapes joint vocal displays in the Java Sparrow

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Keywords: Acoustic communication, Pair bonding, Nest defense, Monogamous songbirds, Estrildidae

Joint displays play a crucial role in animal communication. In some socially monogamous birds, pair-bonded individuals engage in coordinated vocalizations that may function for resource defense, pair-bond advertisement, and signaling commitment between mates. Mated pairs of Java Sparrows maintain lifelong pair bonds and exhibit joint vocalizations, namely duet trill, which are often emitted during agonistic encounters with other conspecifics near their nests. To investigate the function of duet trills, we introduced simulated intrusions that varied in the number, sex, and pairing status of intruders to mated pairs near the nests in captivity. We predicted differential pair responses and individual vocal output when duet trills serve either nest defense, commitment signaling, or mate guarding. We found more duets and greater total individual trill production to pair-bonded intruders than to non-bonded intruders, suggesting a primary role in nest defense. Males generally produced more trills than females, especially when intruder numbers increased. Male intruders elicited stronger responses from both sexes but did not significantly affect duet production. These findings suggest that males play a major role in joint resource defense in Java Sparrows and provide insights into how social context shapes the evolution of joint displays.

A243 Talk

Altitudinal variation in the breeding strategy of the Brown Accentor Prunella fulvescens on the Qinghai-Tibet Plateau

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Keywords: Accentor, Breeding biology, Dunnocks, Life history, High altitude, Tibet

To investigate avian reproductive adaptation in extreme high-altitude environments, this study examined the Brown Accentor *Prunella fulvescens* on the Qinghai-Tibet Plateau. We systematically compared two populations at significantly different altitudes but similar latitudes to analyze variations in reproductive biological parameters and sex ratio allocation. Findings indicate distinct altitudinal adaptive adjustments. Compared with the low-altitude population, the high-altitude population initiated breeding later but adopted a 'quality-first' strategy, characterized by significantly larger egg volumes and a moderately increased clutch size. Despite the harsh environment, there were no significant differences in parental feeding rates, incubation periods, or nest reproductive success rates, suggesting high-altitude parents maintain success by increasing energy investment in eggs. Regarding sex allocation, neither population showed adaptive bias; offspring sex ratios remained balanced with no significant altitudinal or inter-annual variations. Furthermore, the social structure was dominated by social monogamy (>90%). It is hypothesized that the harsh climate, short breeding window, and resource limitations at high altitudes increase the costs and risks of extra-pair copulation, thereby suppressing polygamous behaviors. This study reveals 'quality-first' life history adjustments, random sex allocation, and environmentally constrained low levels of polygamy in high-altitude Brown Accentors, providing insights into avian breeding evolution under environmental stress.

A244 Talk

Telemetry offers novel insights on home range and population size of threatened songbirds in Singapore

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Keywords: Habitat degradation, Radio telemetry, Satellite telemetry, Anthropogenic effects, Conservation, Asian Songbird Trade Crisis

Singapore's biodiversity has been disproportionately affected by land use change in recent history, leading to the extirpation of over 30% of known bird species. Yet, the life history and ecology of many extant birds in Singapore remain poorly known, unlike their temperate counterparts. Among these are the locally threatened Short-tailed Babbler *Pellorneum malaccense* and Chestnut-winged Babbler *Cyanoderma erythropterum*. Simultaneously, Singapore remains a stronghold of the globally Critically Endangered Straw-headed Bulbul

Pycnonotus zeylanicus – highly threatened by the Asian Songbird Trade Crisis. We employed a multi-prong approach combining bird ringing, radio and satellite telemetry, and citizen science to investigate the home ranges and life histories of these three species. Our study provides the first population size and home range estimate for these babblers. Results suggest that they are in rapid decline, with anthropogenic activities greatly affecting territories. Similarly, we quantify the home range of the Straw-headed Bulbul, the first using satellite telemetry for a paleotropic species, with monitoring data revealing potential shifts in habitat requirements for this previously riverine-exclusive species. These findings establish a crucial quantitative baseline for the species' spatial requirements, highlighting the importance of conserving interconnected edge habitats and potential translocation exercises to ensure future viability.

A245 Talk

Long-term trends of shorebird populations in Chukh Lake, eastern Mongolia

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Keywords: Shorebirds, Migration patterns, Chukh Lake, Long-term monitoring, Environmental factors

Long-term monitoring of shorebirds is essential for understanding migration patterns and evaluating environmental drivers of stopover use. We analyzed six years (2019–2024) of mist-netting and ringing data on shorebirds from Chukh Lake in the Daurian Steppe Wetlands, northeast Mongolia. In total, 1,334 individuals representing 36 species were captured. Juveniles comprised 53% of captures, highlighting the importance of the site during post-breeding migration. Across the six-year study period, peak migration occurred on average during spring between 9–26 May and during autumn between 20 July and 13 August, with capture activity highest in the early morning (04:00–06:00) and evening twilight (20:00–22:00). Shorebird community composition differed between seasons; PERMANOVA revealed a significant effect of season on community composition ($R^2 = 0.253$, $p = 0.005$). In generalized linear models, species richness was positively associated with mean temperature ($p < 0.05$). Capture numbers were related to multiple environmental variables, showing negative relationships with lake area and precipitation and a positive relationship with temperature. These findings identify Chukh Lake as an important inland stopover site for migratory shorebirds within the East Asian–Australasian Flyway and underscore the value of continued monitoring under changing climatic conditions.

A246 Talk

Bioacoustics, genomics and morphometric analysis of the *Otus sunia* species complex - exploring the potential for cryptic speciation

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Keywords: Genomics, Bioacoustics, Cryptic species, *Otus sunia*

The Oriental Scops Owl *Otus sunia* is a widely distributed, cryptic polytypic nocturnal raptor. It includes nine subspecies distributed across Asia, some of which are allopatric. Phenotypic traits are known to diverge across geographically isolated populations, which may eventually lead to genomic differences. We examine these differences with contemporary methods in avian systematics. Using citizen science and focal recordings, we conducted a bioacoustic analysis using several spectral and temporal variables across subspecies. We examined diagnosable differences in vocal parameters between subspecies pairs using the highly conservative Isler criterion. Additionally, we use spectral contour features to compare syntax and found distinct call types across two populations, providing evidence for vocal divergence. We constructed phylogenies using Maximum Likelihood and Bayesian methods with low-coverage whole-genome sequencing data. Overall, we combine bioacoustics and genomics with morphometric measurements of museum specimens to provide an integrative taxonomic analysis of the *O. sunia* species complex and to explore divergence across multiple axes, potentially indicating distinct lineages.

A247 Talk

Flying together, flying high: synchronous non-stop transoceanic migration in Grey-tailed Tattlers

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Keywords: *Tringa brevipes*, Satellite tracking, East Asian–Australasian Flyway, Extreme altitude, Flight synchrony, Transoceanic migration

Migratory shorebirds travel in flocks, yet tracking studies usually treat each tagged bird as an independent unit, and whether group members fly closely together during long-distance non-stop transoceanic flights has rarely been examined directly. In August 2025, we fitted nine adult Grey-tailed Tattlers *Tringa brevipes* in Guangdong, China with satellite trackers and tracked their southbound non-stop crossings of the South China Sea. The two morphologically smallest individuals departed within the same hour and flew nearly 3,000 km together, with their tracks remaining indistinguishable within tracker precision until signal loss. The pair climbed together to nearly 5,000 m while overflying north-western Borneo, where ground elevation reached only about 100 m. Two of the remaining seven birds

also exceeded 4,000 m, yet ground elevation beneath any high-altitude flight never exceeded about 1,400 m, indicating that extreme altitudes were actively chosen rather than topographically forced. Such climbs appear common across the species, likely extending the visual horizon for orientation over the landmark-poor open ocean. These data provide rare direct evidence that adult shorebirds can maintain fine-scale synchrony throughout entire long-distance transoceanic flights, including at extreme altitudes.

A248 Talk

Bird Research in the Gaoligong Mountains: Past, Present and Future

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Keywords: Historical records, Avian diversity, Elevational distribution, Conservation

Mountains are often linked to high levels of biodiversity, and this is widely recognized to be a direct consequence of the geological history as well as of their climatic and topographic heterogeneity. The Gaoligong Mountains in southwestern China, which form the southeastern extent of the Himalaya montains, are a narrow range running north-south, rising over 4,000 m in the north and receding into the tropical lowlands in the south. The range is defined by the Irrawaddy to the west and by the Nujiang (upper Salween river) to the east. Like other areas of the eastern Himalayas, the Gaoligong Mountains are characterized by substantial spatial and seasonal changes in climate conditions; temperature and precipitation vary across elevation and between wet and dry seasons. Due to its geo-locations and climatic conditions, its richness of biodiversity with high endemism has long been acknowledged, as it is a designated UNESCO World Heritage Site and is considered a hotspot by multiple conservation organizations. Here, I will summarize the historical expeditions and collection activities in this area, current research updates on birds, and consider the need for additional work that should be focused in the future.

A249 Poster

Evaluating environmental determinants of hinterland habitat selection by waterbirds during high tide in the Korean Getbol

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Keywords: Hinterland habitats, Korean Getbol, Habitat selection, High-tide, Waterbirds

During high tide in the Korean Getbol, waterbirds are required to leave tidal flats and relocate to adjacent inland areas, making the availability of suitable high-tide roosts critical for their survival. This study aims to evaluate the environmental determinants influencing hinterland habitat selection by waterbirds. We designated hinterland water bodies adjacent to major foraging tidal flats in Seocheon, Gochang, Sinan, and Suncheon as our study sites. During high tides, we assessed the abundance of waterbird populations utilizing these respective

hinterlands. To identify key drivers of habitat choice, spatial environmental variables at the precise locations of occurrence—including land cover, distance to water systems, water depth, surrounding wetland area, distance to artificial areas, NDWI (Normalized Difference Water Index), and NDVI (Normalized Difference Vegetation Index)—were extracted. By analyzing these spatial and environmental parameters, we evaluate how the determinants of hinterland selection vary across different phylogenetic and population levels. Understanding these specific habitat requirements will provide critical insights into the ecological drivers of waterbird distribution, emphasizing the need for targeted management of hinterland habitats.

A252 Talk

Annual cycle of the Swinhoe's Snipes

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Keywords: Migration, Asian flyways, Swinhoe's Snipe

Seven Swinhoe's Snipes *Gallinago megala* were tagged by ICARUS transmitters in May 2021 at Baykalsky ringing station (51.633°N, 105.517°E) during spring migration. They reached breeding destinations located 200–700 km from the tagging site in May – early June. Swinhoe's Snipes started autumn migration by short hops. The first significant ecological barrier, steppes and deserts of Mongolia and northern China, was covered by 700–1800 km flights from Siberia and northern Mongolia. The second barrier, South China Sea, was crossed by 1300–2000 km flights from mainland China to the Philippines. Autumn migration took 30–100 days; its duration was defined by stopovers and its length was 4500–6000 km. Wintering sites were located in the Philippines between 17° and 7° N. Spring migration started on 7 April and 9 April 2022 and on 7 April 2023. Breeding destinations were reached on 17 and 23 May 2022 and on 15 May 2023. Spring and autumn migratory paths were similar; no loop migration was recorded. Our data show fidelity to breeding and wintering sites. For two individuals, duration of all parts of their annual cycle was directly measured. They spent 79 and 72 days in the breeding area, 39 and 33 days during autumn migration, and 217 and 228 at their wintering sites. Spring migration lasted for 40 and 44 days, respectively.

A254 Poster

Essential Biodiversity Variables (EBVs) as an optimal format for habitat suitability index of the Black-necked Crane across life stages

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Keywords: Black-necked Crane, Essential Biodiversity Variables, Habitat Suitability Index, GEO BON, Qinghai-Tibet Plateau

Effective conservation of endangered species requires standardized frameworks for organizing multi-scale biodiversity data. The Black-necked Crane *Grus nigricollis*, classified as Near Threatened (NT) on the IUCN Red List, is a typical migratory bird facing various threats. This study proposes that the Essential Biodiversity Variables (EBV) system, particularly in its NetCDF format, provides an optimal structure for organizing, storing, and sharing Habitat Suitability Index (HSI) data for the Black-necked Crane across its breeding, migration, and wintering stages. The EBV framework, developed under the Group on Earth Observations Biodiversity Observation Network (GEO BON), is an emerging system for sharing biodiversity data. The EBV NetCDF format provides a self-describing, machine-independent structure that captures spatial coordinates, temporal dimensions reflecting the annual cycle, life-stage specificity, and component variables within a unified data hypercube, while comprehensive metadata ensures transparency regarding provenance, methodology, and uncertainty. This integration of HSI methodology with the EBV framework enables applications including identification of priority conservation areas, climate change vulnerability assessment, and adaptive management through standardized temporal monitoring. The proposed approach combines the ecological specificity of HSI assessments with the standardization and interoperability benefits of the EBV format, offering a pathway to advance species-specific conservation within the broader context of global biodiversity monitoring under the Kunming-Montreal Global Biodiversity Framework.

A255 Poster

Scaling up bird conservation through citizen science: policy assessment, conflict mitigation, and nationwide monitoring networks

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Keywords: Citizen science, Conservation scaling, Human-wildlife conflict, Illegal wildlife trade, Participatory monitoring, Public science

Urbanization poses significant challenges to bird conservation, including illegal hunting, habitat loss, and human-wildlife conflicts, while also offering opportunities through the rise of citizen science and birdwatching culture. This study explores the transformative potential of citizen science in addressing these challenges through three case studies in China. First, a nationwide survey of pet bird markets, conducted by citizen scientists, evaluated the effectiveness of law enforcement against illegal bird trade, revealing policy blind spots and informing dynamic updates to species protection lists. Second, the AvianNetWatch initiative, a WeChat-based mini-program, documented and mitigated human-bird conflicts in agriculture by crowdsourcing data on anti-bird netting and fostering stakeholder collaboration. Third, the China Breeding Bird Survey established a standardized, nationwide monitoring network to track bird populations, addressing data fragmentation and providing early warnings for species declines. These initiatives demonstrate how citizen science can systematically scale up conservation efforts, bridging gaps between policy, public

engagement, and ecological research. By integrating citizen science across scales and sectors, this study highlights its dual role as a data engine and a catalyst for collaborative conservation action in urbanizing landscapes.

A256 Poster

Comparative assessment of waterbird diversity and distribution in three selected wetlands of Uttarakhand and Uttar Pradesh, India

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Keywords: Diversity, Migratory, Winter visitor, Conservation, Wetlands, India

Wetlands are a very productive ecosystem of our planet. The present study was conducted from October 2022 to September 2024 in three wetlands of Uttarakhand and Uttar Pradesh. The point count method was used for the bird survey. Assessment of diversity indices indicated that the bird species diversity and bird species richness were found to be highest in Haiderpur wetland as compared to other study sites. Bird species evenness was found higher in Adjacent Ganga Valley as compared to the other sites. The result showed that significant difference was found in the number of species and individuals between the study sites. In respect of seasonal variation, the maximum number of species and individuals were observed in winter in all three study sites. The family Anatidae was the most dominant family in all three sites. Little Cormorant, Black-winged Stilt and Common Coot were found most dominant species in Bheemgoda Barrage, Adjacent Ganga Valley and Haiderpur Wetland, respectively. 16 species were observed during the study period which come under the different threatened categories as per IUCN. The presence of threatened species indicated that more monitoring and conservation efforts would be needed to protect these threatened species.

A257 Talk

The salt production process and variables affecting high-tide use of shorebirds in a key salt producing area of Thailand

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Keywords: East Asian–Australasian Flyway, Habitat use, Saltpan, Shorebirds

Saltpans are recognized as important alternative habitats for migratory shorebirds along the East Asian–Australasian Flyway. However, the impacts of the various aspects of salt production on shorebirds have been rarely investigated. This study assessed the effect of

pond type (water storage, evaporation and harvesting) and associated habitat variables on high-tide use by shorebirds in a key salt producing area of Thailand. Surveys from November 2024 to March 2025 showed 183 of 363 managed ponds were used by 30 shorebird species, including Critically Endangered Spoon-billed Sandpiper *Calidris pygmaea* and Endangered Nordmann's Greenshank *Tringa guttifer*. Pond type had large significant effects on shorebird abundance and species richness. Water storage and evaporation ponds were most used, and varied depending on shorebird size. Traditional harvesting ponds were less used, while plastic-lined harvesting ponds were basically avoided. Other factors affected pond use including bund vegetation cover, salinity, distance to nearest building and distance to nearest feeding site. In the absence of natural roosting habitat, salt production habitat for shorebirds can be improved, focusing on water level management and vegetation control in water storage and evaporation ponds, along with reducing disturbance, such as from free-ranging domestic dogs.

A258 Talk

Influence of ambient temperature on biparental incubation patterns in the Saker Falcon

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Keywords: Saker Falcon, Artificial nest, Incubation behavior, Environmental condition, Parental role

Incubation behaviour in birds is strongly influenced by environmental conditions, yet how temperature shapes sex-specific incubation patterns in Saker Falcon *Falco cherrug* remains poorly understood in wild populations. We investigated the influence of ambient temperature on biparental incubation behaviour in wild Saker Falcons using artificial nests equipped with video cameras and iButton hygrometers. Data were collected between late March and early May across 2024–2026, resulting in over 240 nest-days of video recordings paired with ambient temperature. Incubation behaviour was assigned to males and females from video observations and linked with concurrent environmental conditions.We quantified the timing and duration of incubation bouts to characterize sex-specific contributions to incubation in wild Saker Falcons. Bout initiation timing differed between males and females, but there was no clear evidence that this sex-specific pattern changed systematically across incubation stages. This study highlights a strong coupling between ambient temperature, parental role in a wild raptor, providing high-resolution insight into sex-specific incubation under natural conditions.

A259 Poster

Nest predators and reproductive success in the Chinese Francolin *Francolinus pintadeanus* across two nature reserves of tropical Hainan Island, China

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Keywords: Reproductive success, Nest predation, Chinese Francolin, Infrared camera, Artificial nest

Understanding the reproductive ecology of birds and the factors influencing nest predation is essential for developing scientifically sound and effective bird conservation strategies. This pioneering research explored the breeding ecology and nest predation of Chinese Francolin *Francolinus pintadeanus* in two Hainan nature reserves from 2021 to 2025 via field surveys, infrared camera monitoring and artificial nest trials. All natural ground nests were built beside shrub and grass roots. The breeding season lasts March to September and peaks in May. The clutch size was 4.09±1.27 (n=22) and reproductive success was merely 27.27%. All 16 failed nests suffered predation, and 93.75% of damaged nests were abandoned by adults. Artificial nest experiments produced predation rates of 70.91% in Datian (n=55) and 60.00% in Bangxi (n=30). Nest concealment exerted no significant effect on predation risk in either site. Predator composition varied between reserves: snakes and small Indian Civet *Viverricula indica* were primary predators in Datian, accompanied by Greater Coucals *Centropus sinensis* and Wild Boar *Sus scrofa* as occasional threats, whereas snakes and rodents dominated predation in Bangxi. Accordingly, restoring dwarf scrub vegetation is proposed to improve breeding habitat and maintain stable francolin populations.

A260 Talk

Genomic and bioacoustic evidence reveal Camiguin's *catarmanensis* to be a Warbling White-eye *Zosterops japonicus*, not a Yellowish White-eye *Z. nigrorum*

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Keywords: Phylogenetics, Bioacoustics, Integrative taxonomy

White-eyes (genus *Zosterops*) are known as the 'great speciators' capable of dispersing widely over island archipelagoes and rapidly diversifying into multiple species. Historical taxonomic classifications based on plumage colouration have often been unable to reveal cryptic lineages, especially in taxa with highly conserved plumage traits. A poorly understood taxon is *catarmanensis*, which is a subspecies endemic to Camiguin Sur, a small volcanic island in the Philippines. Although assigned to the Yellowish White-eye *Z. nigrorum* based on its yellow underparts, its taxonomic placement has remained contentious due to biogeographic and morphological inconsistencies. To reassess the evolutionary history and taxonomic status of *catarmanensis*, we combined genome-wide DNA data with bioacoustic comparisons of flight calls. Phylogenomic evidence placed *catarmanensis* within the Warbling White-eye *Z. japonicus* clade rather than with *Z. nigrorum*. Divergence dating suggests that *catarmanensis* split from neighbouring Philippine populations of *Z. japonicus* approximately 0.68 million years ago, broadly coinciding with the formation of Camiguin Sur. Bioacoustic comparisons further support this placement with *catarmanensis* sharing the 'elastic' flight call of *Z. japonicus*. Our results indicate that *catarmanensis* represents an insular lineage of *Z. japonicus* and highlight the value of integrating genomic and bioacoustic data to resolve taxonomy in rapidly radiating lineages.

A261 Talk

Cities as refuges for tropical Peregrines: lessons from Singapore's first breeding pair

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Keywords: Peregrine Falcon, *Falco peregrinus ernesti*, Urban ecology, Urban conservation, Natal dispersal, Foraging preferences

In 2025, Singapore recorded the peregrine falcon's first successful breeding attempt in the heart of its bustling Central Business District. While Peregrine Falcons are arguably one of the most widely studied bird species due to their global distribution, very little is known about the ecology of tropical peregrines, particularly our resident subspecies, *Falco peregrinus ernesti*. Across its native range, this subspecies is threatened by the rapid loss of nesting habitat in limestone hills that are extensively quarried for the construction industry. The National Parks Board monitoring of Singapore's only known breeding pair has revealed key insights into their reproductive ecology. Novel approaches to studying their prey preferences using eDNA and tracking natal dispersal using Bluetooth Low Energy tags are shedding light on how this enigmatic subspecies adapts to and thrives in urban environments, highlighting the potential of cities to serve as an unlikely yet important refuge amid ongoing habitat loss.

A263 Talk

Genomic vulnerability improves extinction-risk assessment and future prioritisation across 4,000 bird species

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Keywords: Conservation genomics, Genomic vulnerability, Extinction risk, Evolutionary capacity

Using genome-wide data from approximately 4,000 bird species, we quantify how genomic vulnerability improves current extinction-risk assessment and informs future risk prioritisation under environmental change. Conventional ecological assessments rely primarily on population trends, geographic range and habitat condition, but these variables do not directly capture genetic constraints on persistence, recovery and adaptation. We measure four complementary dimensions of genomic vulnerability: historical effective population size trajectories, genome-wide heterozygosity, ROH length spectra and F_ROH reflecting recent inbreeding and bottlenecks, and annotation-based estimates of putatively deleterious mutation burden. Together, these indicators summarise demographic history, standing genetic variation, recent inbreeding and potential genetic load. We combine them with IUCN threat status, ecological traits, spatial range information and exposure scenarios to estimate their incremental contribution beyond conventional ecological predictors and their influence on projected risk rankings. This framework identifies species currently assessed as lower risk but showing reduced evolutionary capacity, and highlights lineages that may require earlier monitoring or intervention. By linking large-scale avian genomes to extinction-risk modelling and conservation prioritisation, this study provides a scalable template for detecting vulnerable species before demographic decline becomes detectable through conventional monitoring.

A264 Talk

Residence-type based correction of ecological risk from offshore wind farms for birds along the Guangdong coast, China

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Keywords: Offshore wind farm, Residence-type correction, Ecological risk assessment, East Asian–Australasian Flyway (EAAF), Terns, Shorebirds

The Guangdong coast lies in the central East Asian–Australasian Flyway (EAAF), facing the South China Sea, and supports the passage, wintering and breeding of diverse migratory

birds. Offshore wind farm expansion in Guangdong demands accurate bird risk assessment. Conventional risk indices often use vulnerability and susceptibility for calculation, failing to account for variation in time spent over the sea among different residence types. Using three representative areas (Yangjiang, Huizhou and Shantou), we developed a framework covering 186 species from five orders and 18 families to assess collision risk. We introduced a migration-probability correction coefficient based on residence type (passage, wintering, resident, summer visitor) to adjust risk rankings substantially. Uncorrected total risks were 1328, 968, 1242 for Yangjiang (west Guangdong), Huizhou (central Guangdong) and Shantou (east Guangdong), respectively. After correction, values became 1094, 848, 1188 (reductions 17.6%, 12.4%, 4.3%). Highest risk occurred in Shantou, with an autumn peak including multiple groups. Yangjiang was dominated by passage shorebirds, showing a spring peak. Huizhou had the lowest risk, with terns dominated, showing a spring–late summer bimodal pattern. These spatial differences reflect distinct flyway branches of EAAF. Our method improves detection of high-risk taxa often missed by conventional surveys (e.g. nocturnal migrants like shorebirds).

A265 Talk

Genomic data demonstrates deep divergences in bird species across the mountain ranges of the Philippine archipelago

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Keywords: Philippine biogeography, Taxonomy, Sky islands

Mountain ranges in the Philippines are thought to harbour many widespread, often poorly differentiated, species of birds. However, morphological and bioacoustic data have emerged that indicate greater differences than otherwise assumed. In this study we complemented this with whole-genomic data from populations of three montane avian species complexes: Negros Leaf Warbler *Phylloscopus nigrorum*, Long-tailed Bush Warbler *Locustella caudata*, and Bagobo Robin *Leonardina woodi* across seven mountain ranges and three islands in the Philippines. We uncovered deep divergences with no evidence of introgression between populations of the birds from different islands as well as on different mountain ranges on the same islands. There was mito-nuclear divergence observed in a population of *L. caudata* from the central Mindanao highlands being sister to *L. castanea* from Sulawesi for the mitogenome while *L. castanea* was the basal most branch for the nuclear trees – suggesting a southern dispersal and introgression event during a period of global cooling when montane ecosystems were more extensive. Given the deep divergences and lack of introgression signatures between many of these populations, we recommend elevating a number of these to full species status.

A266 Poster

Diurnal activity of Brandt's Voles in relation to their delivery as prey for nestling Saker Falcons in Mongolia

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Keywords: Prey delivery, Activity pattern, Predator–prey interaction

The Brandt's Vole *Lasiopodomys brandtii* is an important prey species of the Saker Falcon *Falco cherrug* in the Mongolian steppe and forms a substantial component of its breeding-season diet. We investigated the relationship between Brandt's Vole surface activity and prey deliveries to nestling Saker Falcons. Brandt's Vole surface activity was estimated from light and proximity logger data, while prey deliveries were identified from nest camera recordings at Saker Falcon nests during 2024–2025. Brandt's Voles exhibited a bimodal daily activity pattern, with activity peaks during the morning and evening. Prey deliveries showed a similar temporal distribution, with the highest delivery frequencies occurring during periods of peak vole activity. Overall, vole activity was positively associated with the timing of prey deliveries to nestlings. These results provide new insights into predator–prey interactions in the Mongolian steppe and suggest that temporal variation in prey activity may influence prey availability for breeding raptors.

A267 Talk

Airborne microplastics organize spatial injury domains and SPP1-centered cell states in the avian lung

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Keywords: Microplastic inhalation, Avian sentinel, Spatial omics, Fibro-inflammatory signaling, SPP1

Airborne microplastics (MPs) are increasingly detected in lungs, yet the spatial and cell-state programs that link particle deposition to tissue injury are poorly resolved. Using a dose-responsive avian model of intratracheal polystyrene MP exposure, we integrated particle mapping with spatial transcriptomics, single-cell RNA sequencing, and metabolomics to resolve how particle deposition is linked to lung injury. Exposure caused dose-dependent pulmonary histopathology and was accompanied by metabolomic perturbation, establishing a bona fide lung injury state. MP hotspots aligned with discrete secreted phosphoprotein 1 (SPP1)-high injury domains marked by coordinated epithelial and myeloid remodeling, including enrichment of the SPP1+ epithelial state and SPP1+ inflammatory monocytes, thereby coupling particle burden to localized transcriptional reprogramming. Through SPP1–integrin and fibronectin 1 (FN1)–integrin circuits, monocytes emerged as a fibro-inflammatory

communication hub. Across the exposure gradient, SPP1 increased in lung tissue and serum, linking localized injury-domain biology to a circulating readout and supporting the potential for nonlethal biomonitoring in avian sentinels. Together, these findings establish a spatially resolved framework in which airborne MPs generate particle-aligned injury microenvironments that couple deposition hotspots to multicellular remodeling, and identify SPP1 as a mechanistically anchored candidate biomarker for biologically informed monitoring of airborne plastic pollution.

A268 Talk

Avian lungs reveal regional fingerprints and body-size filtering of airborne microplastic burdens

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Keywords: Microplastics, Bird lung, Airborne pollution, Bioindicator, Chengdu, Himalayan margin

Airborne microplastics become more biologically consequential when deposited or retained in respiratory target organs. Birds combine high mass-specific ventilation, diverse foraging ecologies, and varied habitat use, making their lungs a sensitive interface between airborne particle exposure and tissue-level burdens. To distinguish regional airborne fingerprints from host-level filtering, we integrated pulmonary MP burdens and composition in wild birds from an urban environment in Chengdu and remote Himalayan-margin forests of southeastern Xizang. Using harmonized laser direct infrared imaging targeting 20–500 μm particles, MPs were detected across both datasets. Chengdu birds included 51 species, with a median abundance of 164.65 items/g, whereas Himalayan-margin birds included 40 species, with a higher median abundance of 390.90 items/g. However, this apparent regional contrast was strongly attenuated after accounting for body-size structure, indicating that lung-normalized MP burden was shaped substantially by host biological structure. Polymer profiles nevertheless differed markedly: Chengdu lungs contained 32 polymer types dominated by chlorinated polyethylene and butadiene rubber, whereas Himalayan-margin lungs contained 23 polymer types dominated by rubber and polytetrafluoroethylene. Across regions, 20–50 μm films and pellets predominated, suggesting recurrent respiratory size–shape filtering and supporting avian lungs as integrative sentinels of airborne plastic pollution.

A270 Talk

House Sparrow reveal patterns of urban environmental quality across various sites in Faisalabad, Pakistan

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Keywords: *Passer domesticus*, Urban ecology, Environmental quality, Biomonitoring, Lead contamination, Urban habitats

Urbanisation alters environmental conditions and can increase contaminant exposure for wildlife inhabiting human dominated landscapes. Therefore it is essential for understanding the ecological consequences of urban growth for evaluating environmental quality. The House Sparrow *Passer domesticus is a synanthrope* and a useful model for assessing local environmental conditions. This study investigated spatial variation in lead (Pb) accumulation in House Sparrow across contrasting sites in Faisalabad, Pakistan. Feather samples were collected from 21 House Sparrows inhabiting three habitat types representing different sources of anthropogenic disturbance: an industrial area, a municipal dumping site, and a high-traffic urban zone (n=7 per habitat). Lead concentrations were quantified using Atomic Absorption Spectrophotometry. Differences among habitats were evaluated using one-way ANOVA and post-hoc comparisons. Lead was detected in all samples, indicating widespread exposure across the urban landscape. Mean Pb concentrations differed significantly among habitats ($p < 0.01$), with the highest levels recorded in the industrial area (0.0706 ± 0.0132 ppm), followed by the dumping site (0.0280 ± 0.0031 ppm) and the traffic zone (0.0180 ± 0.0022 ppm). Elevated concentrations in industrial habitats suggest localised contamination associated with industrial activities. The findings highlighted the utility of House Sparrow for assessing environment quality and use of feathers for noninvasive biomonitoring.

A271 Talk

Revisit Island biogeography theory: bird colonization and extinction probability link to the ecological similarity between resident community on land-bridge islands

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Keywords: Island biogeography, Colonization rates, Extinction rates, Functional diversity, Phylogenetic diversity, Thousand Island Lake

The Theory of Island Biogeography (TIB) predicts that colonization and extinction are shaped by island area and isolation, while recent extensions emphasize that species traits may modify these processes. However, whether species colonization and extinction probability also depends on ecological similarity between focal species and resident communities remains unclear. By using 13 years of breeding-season surveys of 89 bird species across 36 land-bridge islands, we found that, consistent with TIB, colonization probability increased with island area, whereas extinction probability decreased with island area. Species occupying more other islands in the previous year had higher colonization probability, while higher local abundance reduced extinction probability on focal island, suggesting demographic buffering against local extinction. Moreover, dispersal ability mediated the effect of isolation: species with higher hand-wing index were more likely to colonize isolated islands and less likely to go extinct. Importantly, species that are more phylogenetically and functionally similar to resident communities tend to have higher colonization probability and lower extinction probability, indicating pre-adaption and environmental filtering in affecting the colonization-extinction dynamics. These findings extend island biogeography by showing that colonization and extinction are not only governed by island area and isolation, but are also filtered by ecological matching with resident communities.

A273 Talk

Community behavioral heterogeneity shapes disease transmission through the spatial diffusion-dilution trade-off of landscape connectivity

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Keywords: Landscape connectivity, Diffusion-dilution trade-off, Behavioral heterogeneity, Avian influenza, Agent-based model

Landscape connectivity can generate a unimodal effect on disease risk, but the mechanisms underlying this pattern remain debated. Here, we propose and test a diffusion-dilution trade-off hypothesis, in which increasing connectivity first promotes pathogen spread (diffusion-dominated phase) and subsequently reduces risk by diluting pathogen distribution in space (dilution-dominated phase). Using an agent-based model parameterized for avian influenza in waterbirds, we show that this trade-off is critically modulated by community-level behavioral heterogeneity-specifically, the proportion of highly social individuals. Our findings reveal that risk thresholds shift with community composition and that highly gregarious species may not always be the primary drivers of risk, challenging conventional assumptions in disease ecology.

A274 Talk

Bird banding as an opportunity to study avian distress calls

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Keywords: Distress call, Antipredator vocalization, Predation, Bird banding, Bioacoustics

Bird banding generates important data on migration, reproduction, survival, and population demography. However, its value extends beyond these traditional aspects. Banding stations and projects provide opportunities to collect data outside of routine banding protocols. One such opportunity is the study of distress calls, which are vocalizations birds produce when seized by predators or handled by researchers. Although distress calls occur widely among birds, they remain poorly studied compared with other antipredator vocalizations such as alarm and mobbing calls. Because natural predation events are rarely observed, bird banding offers a valuable means of studying distress calls without exposing birds to real predators. In this talk, we briefly review the ecological significance of distress calls before demonstrating the best practices to study them during bird banding, with minimal disruption to standard banding procedures. We then present some preliminary results from our previous and ongoing research based on distress calls collected during fieldwork in China. We conclude by introducing a collaborative project on the global acoustic patterns of distress calls, and inviting researchers to contribute distress call recordings and participate in this growing international collaboration.

A275 Talk

Traffic noise alone reduces the functional value of low-tide foraging flats for shorebirds

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Keywords: Anthropogenic noise, Behavioral time budgets, Road planning, Road-impact assessment, Coastal wetlands, Bird

Road impacts on wildlife are commonly assessed using visible responses such as site occupancy, abundance change, avoidance or flushing, but traffic noise may reduce habitat function even when animals remain present. This issue is important for shorebirds because low-tide foraging flats and high-tide roosts provide distinct tidal functions. We conducted a paired before-after traffic-noise playback experiment in the Dafengjiang Estuary, Guangxi, China, to test behavioral responses of four common non-breeding shorebird species. We quantified immediate flushing and behavioral time budgets during low-tide foraging and high-tide roosting. Traffic-noise stimuli consisted of six independent 1-min highway recordings broadcast at 75 dB(A), and behavioral durations were analyzed using Bayesian multinomial mixed-effects models. Immediate flushing was rare, occurring in 5.6% of observation events (3/54) and involving 4.7% of focal birds (10/212). Among birds that remained on low-tide foraging flats, playback reduced predicted foraging allocation by 4.93

percentage points (95% CrI: -6.65 to -3.27) and increased locomotion by 4.82 percentage points (95% CrI: 3.14 to 6.54), while vigilance changed little. High-tide roosting responses were weak and habitat dependent. These findings show that traffic noise alone can reduce the functional value of occupied shorebird habitat, supporting road siting and mitigation that prioritize low-tide foraging flats.

A276 Poster

Integrating space-air-ground monitoring reveals mutiscale nest site selection of Black-necked Cranes (*Grus nigricollis*) in Alpine Wetlands of Qinghai-Tibet Plateau

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Keywords: Black-necked Crane, drone monitoring, Google Earth Engine, multiscale habitat selection, pastoral activity, alpine wetland

Nest-site selection often depends on habitat conditions operating across multiple spatial scales. Conventional field surveys in alpine wetlands often require repeated visits to nesting areas and direct measurements around nests, while difficult terrain limits spatial coverage and close approaches may disturb breeding birds. We therefore combined distant ground observations, drone verification, and satellite remote sensing to investigate multiscale nest-site selection of Black-necked Cranes (*Grus nigricollis*) in Yanchiwan wetlands of northwestern China. During the 2025 and 2026 breeding seasons, we recorded 127 nests. Google Earth Engine was used to generate annual land-cover maps and quantify habitat composition and configuration at seven spatial extents from 100 to 4000 m around used nest sites and randomly generated available sites. Random forest screening, generalized linear models, and multi-model inference were used to identify the environmental and anthropogenic predictors of nest-site use. Nest-site occurrence was positively associated with landscape heterogeneity within 1000 m, lake habitat at the nest site, greater lake aggregation within 200 m, and larger marshy meadow patches within 200 m. Cranes also nested farther from mudflats and salinized meadows. Anthropogenic and grazing-related variables received limited statistical support. These results show that Black-necked Crane nest-site selection reflects habitat conditions operating at different spatial scales. The space-air-ground integrated monitoring provides a practical approach to extend nest surveys beyond local field measurements while reducing close approaches to breeding birds. Maintaining heterogeneous wetland mosaics and key aquatic habitats, together with targeted management of human activities during the breeding season, may support Black-necked Crane conservation and promote sustainable coexistence between wildlife and traditional pastoral livelihoods in alpine wetlands.

A277 Poster

Plasticity and the structural characteristics of personality traits in captive-reared Japanese Quail during ontogeny

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Keywords: Animal personality, Behavioral plasticity, Behavioral syndrome, Captive-rearing, Japanese Quail

Captive-reared animals are widely used in laboratory research and conservation translocation. While captive-rearing is known to negatively affect behaviors such as foraging, predator avoidance, and dispersal, as well as alter personality traits, the structural characteristics of personality that are fitness-relevant in the wild, particularly between-trait correlations and within-trait plasticity-personality correlations, remain underexplored. Here, we measured exploration, boldness, and fear response in Japanese Quail *Coturnix japonica* reared in captivity throughout their life, to investigate the importance of accumulating prior knowledge about the personality structural characteristics of captive-reared animals. We conducted three rounds of behavioral tests on 78 individuals during their ontogeny. Linear mixed models revealed consistent inter-individual differences in all three personality traits and in the plasticity of each trait, but no within-trait personality-plasticity correlation. Although we found a phenotypic correlation between exploration and boldness, there was no significant among-individual correlation between any two personality traits we examined, indicating that captive-reared quails exhibited no behavioral syndrome. Further experimental studies could verify how environmental settings shape the formation of structural characteristics of personality. We also suggest that greater attention should be paid to the re-establishment of fitness-relevant within-trait and between-trait correlations during pre-release behavioral training for conservation translocations.

A278 Talk

Genetic vulnerability and habitat loss threaten the long-term persistence of the Endangered Jankowski's Bunting *Emberiza jankowskii*

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Keywords: *Emberiza jankowskii*, Genetic load, Ecological niche modeling, Genetic offset, Conservation genomics

Jankowski's Bunting *Emberiza jankowskii* is classified as Endangered (EN) by the IUCN. Its breeding range has shrunk to less than 280 km² in northeastern China over the past five

decades. Although previous studies reported high genetic diversity, the accumulation of deleterious mutations, habitat changes, and climate vulnerability remain unexplored. We integrated whole-genome resequencing data from all 14 published contemporary samples of *E. jankowskii* and three non-threatened congeners (*E. godlewskii*, *E. cia*, and *E. cioides*) to assess genetic load, inbreeding, distributional shifts, and genetic offset. *E. jankowskii* showed significantly higher inbreeding and carried more loss-of-function and deleterious mutations than its relatives, with high-impact variants mostly heterozygous (≈53.8%). Under the SSP585 scenario, suitable breeding area will shrink by over 70% by 2100 with an eastward shift, but suitable habitat is already largely absent there. Genetic offset analysis showed that *E. jankowskii* requires the greatest genomic adjustment to future climates. *E. jankowskii* faces compounding threats from high genetic load, inbreeding, habitat loss, and climate maladaptation. Our findings call for genomics-informed conservation strategies prioritizing climate refugia and genomic health monitoring.

A280 Talk

Migration patterns and conservation of two bustard species in the Uvs Lake Basin, western Mongolia

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Keywords: Eastern Great Bustard, Asian Houbara Bustard, Migration, Conservation, Mongolia, Satellite transmitter

Understanding migration ecology is essential for the conservation of migratory birds. Identifying migration routes, stopover sites, wintering areas, and factors affecting survival is critical for developing effective conservation strategies. We investigated the migration patterns of Eastern Great Bustards *Otis tarda dybowskii* and Asian Houbara Bustards *Chlamydotis macqueenii* breeding in the Uvs Lake Basin of western Mongolia using satellite transmitters. Between 2023 and 2025, transmitters were deployed on 11 Eastern Great Bustards and 9 Asian Houbara Bustards. Tracking data were used to identify migration routes, key stopover sites, wintering areas, and causes of mortality. Eastern Great Bustards migrated 1,700–2,400 km to wintering sites in the Yellow River Basin, including Inner Mongolia and Shaanxi, China. Meanwhile, Asian Houbara Bustards migrated 2,700–3,900 km, wintering in Afghanistan, Pakistan, and Turkmenistan. The Baruunturuun agricultural area was identified as an important post-breeding aggregation and stopover site for Eastern Great Bustards. Asian Houbara Bustards also undertook extensive transboundary migrations, emphasizing the importance of international conservation cooperation. Major causes of mortality in Eastern Great Bustards included power-line collisions, illegal hunting, poisoning, and predation. Mortality events occurred both within Mongolia and across international borders, highlighting the transboundary conservation challenges facing migratory bustards.

A281 Talk

New pathways for urban bird conservation: citizen science facilitating the implementation of OECMs - taking schools and parks in Shanghai as examples

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Keywords: Urban bird conservation, Citizen science, Bird collision survey, OECMs (Other Effective Conservation Measures), Collaborative approach, NGO perspective

With the acceleration of urbanization, bird protection is facing severe challenges. Citizen science has opened up an innovative path for this issue. Our work takes several schools in Shanghai and Jinhai Wetland Park as examples, from the dual perspectives of organizers and practitioners, to explore how through citizen science-driven bird collision surveys, systematic collection of urban bird strike data, and revelation of threat factors, public attention to birds can be effectively transformed into sustained protection intentions and actions. Practice has shown that this pathway could successfully transform the investigation efforts into a series of conservation measures, which, in addition to protecting over 100 species of birds, also collaboratively promoted the recovery of local plant and insect biodiversity. This study further summarizes how through targeted scientific communication and public education, the project's influence can be expanded, and broader public participation can be promoted, thereby providing cases and experiences for advancing urban biodiversity protection through citizen science and exploring a sustainable 'public-scientist-protection' action loop.

A282 Talk

Beyond re-capture: combining the application of the Genoscape approach with orientation experiments at Baikal and Khovd Ringing Station

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Keywords: Landbird migration, Population genetics, Population assignment, Emlen Funnel, Migration direction

Landbird migration shows remarkable diversity across different taxa, yet there is still a major knowledge gap in Asia, particularly on small songbirds. A Genoscape approach, which uses genetic data to assign individuals of unknown origin to natal geographic regions, have successfully improved our understanding of migratory connectivity in American flyways over many songbird species. However, their application in Asia is limited by the scarcity of biological samples from non-breeding areas. Here, we explore an alternative application of the Genoscape framework by combining genetic assignment with orientation experiments at two northern-Asian bird banding stations: Baikal Ringing Station in Russia and Khovd Ringing Station in Mongolia. Located north of major geographic barriers in Asian flyways, these stations may intercept migrants from multiple breeding populations with divergent autumn migratory directions. By linking the innate orientation preferences of juvenile migratory landbirds with their genotypes, we aim to infer population-specific migratory directions and reconstruct putative autumn migration routes at individual level. This approach may help address key knowledge gaps in Asian landbird migration by integrating behavioral and genomic information. It also provides a complementary framework for bird banding stations, allowing them to move beyond passive monitoring and contribute actively to individual-level reconstruction of migration routes.

A284 Talk

A flyway at risk: evaluating shorebird conservation interventions along the East Asian–Australasian Flyway

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Keywords: Conservation evidence, Migratory species, Wader, Applied conservation

Shorebird species along the East Asian–Australasian Flyway (EAAF) face sustained pressure from habitat loss, economic development, and human population growth. In response, conservation efforts have been directed towards mitigating these threats, yet the scope and rigour of these efforts, and how they compare to other flyways, remain unevaluated. Here, we conducted a systematic review of conservation interventions for EAAF shorebird species, drawing on literature in four languages, we assessed the intervention type, life-cycle stage, study design, and effectiveness of implemented conservation interventions across regions and flyways. We found that conservation interventions in the EAAF are concentrated predominantly at non-breeding sites and evaluated using less rigorous study designs than those employed in the East Atlantic and Mediterranean flyways, suggesting that shorebird conservation along the EAAF remains at an earlier stage of development relative to other flyways. Within the EAAF, documented interventions are disproportionately concentrated in East Asia, with substantial gaps in both implementation and evaluation across Southeast Asia. We argue that advancing shorebird conservation across the EAAF requires greater investment in rigorous evaluation and coordinated inter- and intra-flyway knowledge sharing, so that conservation effort translates into measurable population-level impact.

A285 Talk

Seasonal reversal of crosswind response during high-altitude migration in Bar-headed Geese

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Keywords: Bar-headed Goose, High-altitude migration, Satellite tracking, Crosswind response, Seasonal migration, Wetland conservation

Seasonal priorities can shape how migrating birds respond to winds, but this has rarely been tested in species moving between high-elevation wintering and breeding wetlands. We analysed tracking data from 55 adult Bar-headed Geese tagged at four wintering wetlands in south-western China from 2014 to 2025, covering 114 complete migrations. Birds used three movement strategies: short local plateau routes to newly documented breeding wetlands in Ganzi, medium-distance movements to the Qinghai-Tibet Plateau, and some long-distance movements to Mongolia. Across 91 medium-distance migrations with matched atmospheric data, responses to side winds reversed between seasons. In spring, stronger side winds were associated with more direct routes, suggesting that birds corrected their flight paths when timely breeding arrival was important. In autumn, stronger side winds were associated with greater route deviation and longer movement, suggesting greater tolerance of wind drift when energy saving was favoured. This seasonal contrast was evident across six movement parameters. Concentrated autumn stopovers at Ruoergai and Napahai identify these wetlands as corridor-level conservation priorities. The study revealed an overlooked high-altitude migration network and showed that seasonal priorities can influence not only timing and stopover use but also route shape and wind response.

A286 Poster

Beyond park boundaries: how surrounding landscape shape avian community structure in Shanghai parks

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Keywords: Urban park, Urban planning, Nestedness, Biodiversity, Biotic homogenization

Rapid urbanization transforms natural habitats and reshapes avian communities. While parks serve as vital biodiversity refuges, their ecological efficacy is constrained by the surrounding urban matrix. These park-matrix dynamics remain understudied in high-density Asian megacities. To investigate how surrounding landscape composition and configuration

impact avian communities inside parks, we analyzed four seasonal bird surveys across six large parks (>60 ha) in Shanghai using nestedness modeling and non-metric multidimensional scaling. As landscape composition varies, significant nestedness patterns emerged along matrix urbanization gradient, with parks surrounded by buildings and roads exhibiting highly homogenized communities dominated by resident, omnivorous generalists. Parks surrounded by farmlands and grasslands attracted more summer breeders and wintering species, while passage migrants used all parks uniformly. Landscape configuration also mattered, with road integrity and patch size heterogeneity positively predicting abundance and richness. Furthermore, surrounding landscape features - rather than internal habitat makeup - accounted for most avian community variation across parks. This demonstrates that when park habitats are similarly well-planned, the surrounding matrix ultimately decides a park's maximum conservation capacity. To effectively preserve avian diversity, urban planners should shift towards landscape-scale management, enhancing green coverage and structural variance to establish the matrix as a robust buffer zone.

A287 Talk

A trade-off in parental investment between first and second breeding attempts in the Oriental Magpie *Pica serica*

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Keywords: Renesting, Parental investment, Time constraint, Cost of reproduction, Oriental Magpie

Many avian species breed multiple times a year but how the first investment shapes subsequent performance remains poorly understood. Using long-term monitoring data (2008–2025) on the Oriental Magpie *Pica serica*, we compared breeding timing, parental investment, and reproductive outcomes of 287 pairs that failed in their first-breeding and their 68 renesting events. Earlier breeders were more likely to renest. In their second attempts, breeders exhibited reduced clutch investment, and pairs that failed at the chick stage produced smaller eggs and lower fledging success. On the other hand, pairs who invested more during chick stage in first attempts exhibited higher fledging rate in their second attempts. Our findings suggest that renesting in the Oriental Magpie is mostly governed by time constraints, but the details depend both on the trade-off between the two breeding attempts and individual quality of the breeders.

* This study was possible with the collective effort of all the participants of the ecological monitoring of the Oriental Magpies.

A288 Talk

A probabilistic framework for quantifying species' elevational distribution and assessing elevational migration intensity

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Keywords: Elevational migration, Ecological modeling, Species distribution model, Gaussian mixture model, Citizen science

Understanding the elevational distribution of species is crucial for predicting biodiversity change. Species' elevational distribution can be complex and multimodal, driven by the interplay between heterogeneous mountainous topography and the unique biological features of species. Yet such complexities have been largely neglected by current methodological approaches, hindering mechanistic insights into elevational migrations. Here, we developed a probabilistic framework to quantify the elevational distributions and seasonal migration propensity. We proposed a novel metric of elevational migration tendency (EMT) to comprehensively assess distribution dynamics and compare migration intensity across regions and species. Among 463 bird species of eBird occurrences from six mountain ranges worldwide, 234 species showed multimodal elevational distributions, primarily driven by spatial habitat segregation. Moreover, species tended to exhibit fidelity to their origin habitats during migration, restricting the magnitude of seasonal elevational redistribution. The structure of multimodal elevational distribution and migration distance showed significant phylogenetic signal. The background topography and hand-wing index influenced the multimodal elevation distribution structure and migration distance of birds. Our framework provides a powerful and extensible tool to disentangle the complexities of species' elevational distributions (R package EleMig), and advances a more mechanistic understanding of elevational migration, with broad applicability to mountain taxa worldwide.

A290 Talk

Analysis on food diversity for nestlings of Red-billed Leiothrix *Leiothrix lutea* based on miniature cameras and DNA metabarcoding technology

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Keywords: *Leiothrix lutea*, Nestling diet, Species diversity, Miniature camera, DNA metabarcoding

Conducting dietary studies on birds is not only essential for understanding their habits but also a critical step in elucidating avian ecological adaptation and reproductive success. The Red-billed Leiothrix *Leiothrix lutea* exhibits highly cryptic nesting behavior during the breeding season, making it difficult to comprehensively and accurately determine the diet composition and diversity of its nestlings using traditional observational methods. From April to September 2025, miniature cameras were deployed to continuously monitor parental feeding behavior, and fecal samples of nestlings were collected for DNA metabarcoding analysis targeting the COI gene in the Liuyang Daweishan Provincial Nature Reserve of Hunan province, China. Video monitoring recorded 274 valid feeding events, identifying 11 orders of invertebrates, with Orthoptera (29.45%), Mantodea (21.36%), and Hemiptera (19.42%) being the most frequent taxa. DNA metabarcoding detected 12 orders, with Lepidoptera (51.32%) and Hemiptera (37.17%) dominating the sequence abundance. The Shannon diversity of sequencing data (3.386) was significantly higher than that of video data (1.61), indicating that each method has its own detection biases. The nestling diet consisted of larger-bodied prey (Orthoptera, Mantodea) providing the energy foundation, and smaller-bodied prey (Hemiptera, Lepidoptera larvae) which were taxonomically diverse, occurred in 100% of samples, and ensured food stability when larger prey was scarce.

A291 Talk

Flyway conservation in Asia – connecting flyway science to action on the ground

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Keywords: Migratory species, Flyway, Community conservation, Movement ecology

The East Asian-Australasian (EAAF) and Central Asian Flyways (CAF) are among the world's most diverse migratory flyways, connecting ecosystems from tundra and steppe to tropical rainforests and intertidal flats. However, the intersection of both flyways with the world's densest population centres means that anthropogenic habitat loss and degradation perennially pose a significant threat to migratory bird populations, with coastal and freshwater wetlands among the most affected environments. Agricultural expansion and intensification, alongside poorly regulated hunting in this region, have resulted in increasingly inhospitable environments for migratory species. Within the past two decades, there has been a sustained surge in conservation science to guide interventions for migratory species in both regions, with monitoring, habitat use and movement ecology studies among the most ubiquitous. New studies and syntheses have also examined the impact of diverse threats on bird population, ranging from hunting and bycatch mortality to energy infrastructure and wetland habitat loss. This session reviews the prevailing conservation issues for migratory species (both waterbird and landbird) in the EAAF and CAF and showcases specific case examples that demonstrate how conservation science questions have shaped on-ground conservation interventions for migratory species.

A292 Poster

A health risk assessment of mercury exposure and selenium protection in breeding Bridled Terns *Onychoprion anaethetus* in South China Sea

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Keywords: Seabirds, Bridled Tern, South China Sea, Risk assessment, Mercury, Selenium

Mercury (Hg) bioaccumulates in marine food webs, threatening apex seabirds because of its neurotoxicity. While East and Southeast Asia represent the largest global sources of anthropogenic Hg emissions, impacts on seabirds within this region remain understudied. This study establishes baseline total Hg (THg) and protective selenium (Se) levels for the migratory Bridled Tern *Onychoprion anaethetus* in the northern South China Sea for a health assessment. Feathers were collected from adults and unfledged juveniles in Mirs Bay, Hong Kong during the 2025 breeding season. THg levels for adults (0.58–1.87 mg/kg d.w.) and juveniles (0.46–0.97 mg/kg d.w.) fell safely below the 2.30 mg/kg avian 'low injury' threshold, suggesting that they do not currently face immediate health threats from Hg toxicity. Furthermore, molar Se:Hg ratios in adults (9.27–48.5) and juveniles (3.68–8.68) consistently exceeded 1:1, indicating sufficient Se to prevent toxicity. Between life stages, adults exhibited significantly higher THg (1.22 ± 0.35 mg/kg d.w.) and Se (10.28 ± 2.66 mg/kg d.w.) than juvenile body feathers (THg: 0.65 ± 0.11; Se: 1.38 ± 0.26). Overall, this research provides a health assessment for a tropical tern species, highlighting the importance of incorporating life-history stages into future seabird monitoring research in the region.

A293 Poster

Urban noise alters behavior but not physiology of nestlings in the Oriental Magpie *Pica serica*

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Keywords: Anthropogenic noise, Habitat structure, Behavior, Physiology, Oriental Magpie

Urbanization changes natural landscapes through the expansion of transportation networks. Anthropogenic noise generated by these changes is an important environmental stressor for wildlife. Although previous studies have shown noise affects avian behavior and physiology, characterization of anthropogenic noise in natural habitat and examination on the effect on avian phenotypes has rarely been conducted. We investigated how habitat structure around nests shapes acoustic environments and whether anthropogenic noise exposure is associated with behavioral and physiological responses in nestling Oriental magpies *Pica serica* from two populations in South Korea. To characterize habitat components for noise levels, land-cover types and road-related variables around nests were extracted using QGIS, and Random Forest analysis was conducted. As the behavioral and physiological traits of the

nestlings, we measured visual perception time, handling resistance, respiratory rate, hematocrit, and corticosterone levels. Road-related habitat variables were the major predictors of nest noise variation, and higher maximum noise levels were associated with delayed visual perception in nestlings. Other physiological traits seemed to be unaffected by the noise levels. Our results suggest that urban habitat elements shapes local acoustic environments and influence behavioral responses of the nestlings but the effect seems to be unrelated with stress due to anthropogenic noise.

A294 Talk

Acoustic communication studies on birds in India

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Keywords: Anthropogenic noise, Avian bioacoustics, Bird call, Female song, Geographic song variation, Song repertoire

The scientific study of acoustic signals and their ecological functions in birds is termed avian bioacoustics. This field has gained significant attention worldwide, as evidenced by the growing volume of related research publications.

However, regardless of the availability of more than 1,300 avian species in India, limited studies appear in this field. Moreover, research conducted on avian models in India appears to be scattered and relatively underrepresented in the global literature. This review addresses this issue with the compilation of the studies dealing with acoustic communication on birds in India with a focus on research trends, methodologies and key discoveries made so far. Publications on the neural mechanism of song production and automation in avian bioacoustics have not been included in this presentation.

A296 Poster

Comparison of bark-gleaning birds in pine and oak forests of the Western Himalaya in Uttarakhand, India

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Keywords: *Pinus roxburghii* expansion, Bark-gleaning birds, Functional traits, Foraging ecology, Avian community composition, Himalayan forests

Expansion of pine forest *Pinus roxburghii* into oak forest *Quercus leucotrichophora* in the Western Himalaya can significantly affect bird communities, particularly bark-gleaners that may be sensitive to alteration in habitat structure and tree species composition. We compared abundance, diversity and composition of bark-gleaning birds in pine and oak forest sites and assessed whether morphological features and foraging behaviour of species explained assemblage composition. 12 bark-gleaner species were observed in 5 pine and 5 oak sites, including woodpeckers, nuthatches and treecreepers. Total bird abundance,

species richness and diversity of bark-gleaners were comparable in pine and oak. However, there were significant differences in species composition between the two forest types due to the preference of two bird species for oak forest and three bird species for pine. In oak forest, a greater proportion of bark-gleaners were small and were non-excavators (secondary cavity-users) than in pine. Oak forest harboured species with more diverse bill types and of a greater range of sizes than pine forest, suggesting utilisation of more diverse foraging substrates in oak, also supported by foraging observations. Our study reveals promising avenues for further research on the drivers of alteration of avian functional guilds caused by pine expansion in the Himalaya.

A297 Talk

Promoting a bird ringing network in Asia: a framework for the creation of an East Asian landbird ringing working group.

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Keywords: Bird ringing, Bird banding, Landbirds, Migration, Cooperation, Collaboration

Throughout the years, bird ringing has been a vital tool towards the long-term monitoring of landbirds across the world. It has led to the discovery of a huge range of knowledge about birds, including identification of key stopover areas, migration paths and changes in populations. It is highly necessary for identifying the most effective methods of conservation and protection. However, there is a need to connect ringing schemes in different countries to share knowledge, for the coordination and collaboration on ringing/tagging projects to ensure the streamlining of methodologies. These connections are even more critical regarding the conservation of migratory species, whom require protection across many countries. The East Asian–Australasian Flyway is one the most important flyways in the world, hosting over 400 species of migratory landbirds. To ensure ringing data collected is used in the most effective manner, we must have a solid connection between the ringing schemes in countries across East Asia. International bird ringing networks are present across the world in varying capacities, but not yet formally for landbirds in Asia. Here, an overview of such networks will be presented, alongside a proposal for the creation of an East Asian Landbird Ringing Working Group.

A299 Talk

Conserving Asia's riverine avifauna: bridging flyway-scale gaps

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Keywords: Riverine ecosystem, Connectivity, Wetland conservation, Flyway

Asia's riverine and inland wetlands support highly specialized migratory and resident birds, yet these linear ecosystems face severe degradation from flow regulation, sand mining, and agricultural encroachment. Riverine birds serve as sensitive indicators of basin-scale ecological health, but their conservation is systematically hampered by a lack of range-wide population data and clear flyway connectivity mapping. This preliminary study explored regional research gaps and evaluates conservation measures and management frameworks, drawing on focal initiatives in the East Asian-Australasian Flyway. Scaling up site-based projects requires moving beyond isolated projects toward integrated catchment-wide management. We call for discussion of a collaborative, transboundary research framework that links local research and monitoring with flyway-scale riverine ecosystem modelling. Integrated approaches may ensure that river basins are managed as continuous ecological networks.

A300 Talk

What can we learn from common birds? insights from the Oriental Magpie *Pica serica*

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Keywords: Common birds, Urban ecology, Citizen science, *Pica serica*, Long-term monitoring

Common birds offer excellent opportunities for understanding avian ecology across diverse environmental gradients, yet the ecological value of these species is frequently underestimated. Here, we present findings from long-term monitoring of a common Asian resident bird, the Oriental Magpie *Pica serica*. By examining the breeding ecology of two semi-urban populations on university campuses, we found that magpies' ecological responses to habitat urbanization differed between the two populations. Population-specific responses or geographic variation in ecology is not a new topic; however such variation is often overlooked in avian studies. We believe that investigating common birds in various locations provides a much richer understanding of how species adapt to environmental changes. To achieve this scale of monitoring, citizen science data can be efficient and labor-effective, but only if reporting is not biased toward rare species. We urge both the scientific community and the general public to cultivate a deeper appreciation for the ecological importance of common birds.

A301 Poster

Assessing subspecific variation in the Oriental Magpie-Robin *Copsychus saularis* using an integrative approach

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Keywords: *Copsychus saularis*, Bioacoustics, Morphology, Biogeography, Environmental niche, Evolution

The Oriental Magpie-Robin *Copsychus saularis* is a widespread Southeast Asian songbird with seven subspecies across two groups: white-bellied [*C. s. saularis*] of India, Indochina, and Malay Peninsula, and black-bellied [*C. s. amoenus*] of Borneo and Java. Previous studies lack comparisons of acoustics, morphology, and environmental niches across all subspecies, whereas the phylogenomic placement of *C. s. ceylonensis* and *C. s. andamanensis* is unknown. This study bridges such literature gaps to assess species-wide intraspecific variation in these traits, and potentially uncover the evolutionary processes driving such variation. We use acoustic (~100 songs) and occurrence data (~55000 occurrences) from Macaulay Library, morphometrics from museum specimens (66 individuals), and genomic data from toe-pad and blood samples (24 individuals:~5,000 UCE loci/~100000 SNPs), all covering 5 to 7 subspecies assigned based on distributions provided in contemporary literature. We find a case of cytonuclear discordance across the species complex, with maternal lineages showing more distinct groupings in North Indochina and Borneo. Genome-wide SNPs show an isolation-by-distance (IBD) pattern that is absent in mitochondrial DNA. PCA and admixture analyses show three clusters within the IBD pattern, revealing structure in the widespread nominate *C. s. saularis*. Large overlaps are observed in climatic niches, acoustic, and morphometric characters; however, we find that the oldest lineages of Borneo, *C. s. adamsi*, diverge most for these parameters, being larger with thicker bills and singing slower at lower frequencies than the other taxa. These relationships may further aid in the determination of island and mainland colonization histories.

A303 Talk

Early embryonic thermal fluctuations shape avian phenotypic plasticity: multi-omics insights from intermittent cold stimulation in domestic chickens

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Keywords: Behavioral adjustment, Domestic chicken, Embryonic development, Intermittent cold stimulation, Phenotypic plasticity, Multi-omics

In oviparous species, embryos are highly sensitive to ambient thermal fluctuations. Although avian embryos are buffered by parental incubation, natural incubation recesses cause periodic egg cooling. Using the domestic chicken *Gallus gallus domesticus* as a model, we examined the effects of intermittent cold stimulation (ICS) during embryonic days 1–10. Eggs were assigned to control incubation at 38°C, mild ICS at 23°C for 3 h/day (recovery at 38°C for 21 h/day), or severe ICS at 8°C for 3 h/day (recovery at 38°C for 21 h/day), with recovery incubation at 38°C for 21 h/day. ICS induced intensity-dependent developmental, behavioral, neural, metabolic, and microbial responses. Mild ICS promoted compensatory development, including prolonged incubation, and increased egg weight loss, whereas severe ICS markedly reduced hatchability, with mortality concentrated during early embryogenesis. Both ICS treatments produced a post-hatching energy allocation trade-off favoring brain development over somatic growth. Mild ICS enhanced exploratory behavior and cognitive flexibility, while severe ICS impaired social behavior and reduced neuronal abundance in the nidopallium caudolaterale and nucleus accumbens. Single-cell transcriptomics identified region-specific adaptations in the central nervous system involving thermogenesis, immunoendocrine signaling, stress responses, neuroprotection, and lipid metabolism, with TTR and HINTW as potential shared targets. Metabolomic and metagenomic analyses revealed lipid metabolic reprogramming and gut microbiota remodeling, suggesting a microbiome–metabolite–behavior axis.

A304 Talk

Bird tracking in the East Asian–Australasian Flyway: current status and future directions

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Keywords: Satellite, Telemetry, Tracking, East Asia, Flyway, GPS

Advances in satellite and GPS telemetry have made it possible to track individual animals year-round and globally. Movements, migration patterns and habitat use derived from tracking data provide fundamental knowledge on habitat and species conservation. In the East Asian–Australasian Flyway (EAAF) which consists of millions of migratory birds, many species are facing intense pressures from human activities, and satellite telemetry is particularly useful to accelerate knowledge gains for effective conservation. We reviewed

published studies using empirical bird tracking data in the EAAF and examined the current state of knowledge and identified gaps in terms of taxonomic coverage and geographic representation. Among EAAF migratory bird species, approximately half in the Orders geese and ducks, shorebirds and raptors were being tracked, but only a low percentage of passerine species were tracked. Species in threatened categories in the IUCN Red List were tracked more often than those in the 'Least Concern' category. Moreover, tracker deployment efforts are concentrated in Australia and China, and low number of tracking studies were conducted in Southeast Asia, although data from this region can potentially be obtained from trackers deployed elsewhere. We put forward recommendations to guide future efforts in data collection and analysis.

A307 Poster

Baseline assessment of artificial light at night on waterbirds in Deep Bay

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Keywords: Conservation, Deep Bay, Light pollution, Waterbirds, Wetland

Artificial light at night (ALAN) is an increasing environmental pressure in coastal wetlands, yet its influence on waterbird behaviour remains poorly understood in East Asian–Australasian Flyway. Establishing baseline information on its impact is important for assessing impacts of urban development, particularly in light of planned expansion in Deep Bay area. Between September 2024 and May 2026, we conducted coordinated surveys of waterbirds and monitored night sky brightness at Mai Po Nature Reserve. Target waterbird species were grouped by foraging strategy, and scan sampling was used to record foraging and loafing behaviour. Foraging proportion and the Night Preference Index (NPI) were calculated to represent behavioural preference. GLMM and LM were used to examine the effects of season, location and night sky brightness. The result suggests seasonal differences in nocturnal preference among foraging guilds. Night sky brightness was positively associated with NPI in some cases, indicating a potential relationship between light conditions and behavioural preference. However, no significant relationship was detected between night sky brightness and nocturnal foraging proportion. These findings provide the first behavioural baseline for future long-term monitoring of ALAN impacts on waterbirds in Deep Bay.

A308 Talk

Wings of time: chromosome-level genomics and temporal population analyses illuminate the genetic legacy of the White-rumped Vulture *Gyps bengalensis*

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Keywords: White-rumped Vulture *Gyps bengalensis*, Critically Endangered species, Chromosome-level genome assembly, Conservation genomics, Population genomics, Genetic erosion

The White-rumped Vulture *Gyps bengalensis*, a key ecological scavenger once widespread across South Asia, has undergone a catastrophic population decline driven primarily by veterinary diclofenac poisoning and other environmental threats, resulting in its current Critically Endangered status. To support conservation genomics and recovery efforts, we generated a high-quality chromosome-level genome assembly using PacBio HiFi long-read sequencing combined with proximity-ligation (Hi-C) scaffolding. The assembly achieved near-complete chromosomal representation, although several microchromosomes remain unresolved, reflecting the inherent complexity of avian genome architecture and current sequencing limitations. We further conducted population genomic analyses on both contemporary individuals from a conservation breeding program and museum-preserved historical wild specimens collected during the late 19th and early 20th centuries. This rare temporal sampling offers a unique opportunity to investigate changes in genetic diversity and demographic history before and after the species' dramatic decline. Preliminary structural and functional annotation identified a comprehensive repertoire of protein-coding genes spanning diverse biological functions. Collectively, these genomic resources establish a valuable foundation for investigating evolutionary resilience, population structure, and genetic erosion in *G. bengalensis*, while providing essential tools to inform its long-term conservation and management.

A309 Talk

Effects of extreme temperatures and urbanization on laying dates in an urban bird, the Oriental Magpie *Pica serica*

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Keywords: Climate change, Urbanization, Extreme temperature events, Breeding phenology, Breeding timing, Oriental Magpie *Pica serica*

Climate change and urbanization are major anthropogenic drivers that rapidly alter habitat conditions. Although their effects on wildlife have been widely studied, the influence of climatic conditions may depend on habitat composition. We investigated the interactive effects of extreme temperature events and urbanization on breeding timing in the Oriental Magpie *Pica serica* using long-term monitoring data from Seoul National University (SNU) and Korea Advanced Institute of Science and Technology (KAIST), representing populations that differ in climate and urbanization. Extreme hot and cold events were defined using the 90th and 10th percentiles of daily maximum and minimum temperatures based on a 30-year climatological normal. Urbanization was quantified as the proportion of impervious surface around nests using land-cover maps. We found that the effects of extreme temperature events on laying dates were mediated by habitat urbanization, with stronger effects occurring in more urbanized environments. These findings highlight the combined influence of climate change and urbanization and emphasize the importance of considering habitat conditions when evaluating climate change effects on wildlife breeding.

A310 Talk

Estimating the abundance and habitat use of the critically endangered Yellow-breasted Bunting *Emberiza aureola* on its wintering grounds

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Keywords: Roost counts, Distance sampling, Population stronghold, Thailand, Landbirds

Although there has been a dramatic population decline of the now critically endangered Yellow-breasted Bunting *Emberiza aureola*, no global population size estimate is currently available. We conducted population surveys and roost counts across 14 sites within its wintering grounds in Thailand to assess habitat selection and estimate its population size within the country. Our results show that the density of foraging Yellow-breasted Buntings was positively associated with the extent of rice fields at the ripening stage. Eight night-roosts were found; six were characterized by emergent vegetation in wetlands surrounded by open water, whereas two were located in grassland and reed patches within rice fields. 80,921 individuals were counted at the eight roosts and 4,090 individuals were found across four day-resting sites, identifying Thailand as a major stronghold supporting the largest known wintering population. We recommend night-roost counts for long-term population monitoring and distance sampling using line transects to assess habitat-specific densities on the wintering grounds. Given the species' distribution, coordinated surveys across the wintering range may help identify priority sites and inform adaptive management strategies. Incentive schemes and community stewardship programs will likely be needed to support coexistence as nearly all wintering habitat will be outside government-controlled protected areas.

A311 Poster

Community characteristics of potential nest predators and predation risk of Red Junglefowl under different disturbance intensities

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Keywords: *Gallus gallus jabouillei*, Human disturbance, Nest predation, Artificial nests, Infrared camera

Human disturbance is a critical factor restricting the persistence and sustainability of ground-nesting bird populations. To explore the effects of human disturbance on nest predation risk of the Red Junglefowl *Gallus gallus jabouillei*, we established three disturbance gradients (high, moderate, and low) at Hainan Tropical Wildlife Park and Botanical Garden in May 2026. A total of 84 artificial nests were deployed, and systematic field surveys were conducted with the aid of infrared camera monitoring. The results revealed that nest predation rate increased significantly with the intensification of human disturbance: 90.00% in the pedestrian area, 68.75% in the vehicle passage area, and 46.88% in the rear area ($p = 0.004$). The Greater Coucal *Centropus sinensis* and Wild Boar *Sus scrofa* were the main predators of experimental eggs, and the two predators exhibited distinct spatial differentiation, dominating the high and moderate-disturbance areas, respectively. In addition, predator species richness increased as human disturbance decreased. Human disturbance can indirectly alter nest predation risk and reproductive success of the Red Junglefowl by reshaping the structure of local predator communities. The findings of this study provide important theoretical support and practical references for the conservation and management of wild birds, regulation of human activities in tropical scenic areas, and research on life-history strategies of pheasant species.

A312 Poster

Restoring flyway stopovers: enhancing migratory passerine conservation through paddy field revitalization in abandoned farmland in Hong Kong

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Keywords: Paddyfield, Flyway, Restoration, Buntings, Warblers, Stopovers

This study evaluates the ecological efficacy of a three-year agricultural revitalization project conducted in the Shui Hau freshwater marshlands, Hong Kong. Initiated to combat wetland degradation from farming abandonment, the project actively restored degraded marshes into active farmlands, expanding the cultivated paddy field area from 0 to 2,268 m^2. Systematic surveys were conducted across both actively managed zones and unaltered marshland habitats to track avifaunal changes before and after implementation. In marshland habitats undergoing intensive rehabilitation, both species richness and average abundance increased significantly post-management. Conversely, unmanaged control areas suffered a significant decline in species richness. Regression modeling demonstrated that the expansion of the recultivated paddy area had a significant positive effect on granivorous buntings (*Emberiza spp.*) and insectivorous reed warblers (*Acrocephalus spp.*) during autumn migration. For every 100 m^2 increase in paddy area, the expected mean counts of buntings and reed warblers increased by 9.1% and 9.2%, respectively. This scaled up to a predicted surge in expected mean counts by 626% for buntings and 641% for reed warblers between 2022 and 2024. The pronounced increase in target migratory species highlights the critical role of active, seasonal habitat management in supporting vulnerable avifauna during key migratory windows.

A313 Talk

Ecological correlates of tick prevalence in migratory passerines at a stopover site in South Korea

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Keywords: Host-parasite ecology, Passerines, Tick prevalence, Stopover, East Asian Flyway

Long-distance bird migration connects distant regions and can spread pathogens and ectoparasites across continents. Among these, ticks are of particular public-health concern, and because they have limited mobility and rely on hosts for dispersal, understanding host-parasite relationships is critical for predicting tick transmission. We examined which ecological traits are associated with tick prevalence in passerines migrating through South Korea. From spring 2019 to autumn 2025, we examined 8,744 individuals of 49 species during

bird-banding surveys and modeled the possible effects of ecological traits (foraging guild, migration distance, and body size) and season on tick prevalence using a phylogenetic generalized linear mixed model (PGLMM). Ground-foraging species and residents showed higher prevalence, likely reflecting prolonged exposure to questing ticks at ground level, whereas body size had no significant effect after accounting for phylogeny. The highest predicted prevalence occurred in Turdidae, including *Turdus pallidus*, *T. hortulorum*, and *T. obscurus*. Among infested individuals, tick intensity was 4.5 times higher in autumn, consistent with autumn peaks in larval tick parasitizing small birds. By identifying the traits most strongly associated with tick infestation in stopover passerines, our findings highlight candidate host species for tick-borne disease surveillance and contribute to a better understanding of landbird-parasite ecology in East Asia. This study was supported by the National Research Foundation of Korea (NRF) grant funded by the Korea government (MSIT) (RS-2025-24523796) and "Research Program for Agriculture Science and Technology Development (Project No. RS-2026-25519136)" Rural Development Administration, Republic of Korea.

A314 Talk

Flight and metabolism shape the tempo of genome evolution in birds

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Keywords: Flight style, Evolutionary rates, Metabolic rate, Life history traits

As a hallmark of avian ecological innovation, powered flight has fundamentally shaped diverse aspect of birds. The energy demand of flight may have mutagenic impact on genomes, influencing how fast genomes evolve. However, the relationship between flight, metabolism, and evolutionary rates remains relatively underexplored. Leveraging 363 newly-available avian genomes from >90% of avian families, we quantified three distinct types of genomic evolutionary rates to capture a broad spectrum of mutational processes. By

combining four flight-related traits and three metabolic metrics, we uncovered significant associations between flight style, metabolism, and multiple evolutionary rates. Next, using a causal inference framework, we demonstrated that metabolism accounted for 43.3% of the total effect between flight and evolutionary rate, underscoring its key role. Together, our findings establish a robust connection between flight, metabolism, and evolutionary rates, offering new insights into how key innovations and associated phenotypes shape the tempo of genome evolution.

A315 Talk

Understanding the use of hunting tools to conserve migratory birds

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Keywords: Migratory birds, Illegal bird hunting, East Asian–Australasian Flyway, Buntings, Mist nets, Seasonal timing

Illegal hunting is an increasingly recognized threat to Asian birds, particularly migratory species that traverse vast geographic ranges throughout their annual cycles. However, the spatial and temporal patterns of bird hunting and the tools used remain poorly understood. Here, we analyzed more than 6,000 adjudicated bird-hunting cases in China involving over one million birds. The number of birds hunted per case was significantly higher in northeastern and eastern China, although extreme cases involving more than 10,000 birds occurred across several regions. Hunting intensity was disproportionately higher during autumn migration. Nearly half (47%) of cases involved mist nets (34% also involved electronic playback devices), followed by traps, guns, poison, and electrical fences. Nets and poison were associated with the largest numbers of birds killed. Furthermore, 52% of cases involved migratory species, representing 65% (328 species) of all identified hunted species (508 species). Notably, migratory buntings were taken in particularly large numbers, including the critically endangered Yellow-breasted Bunting *Emberiza aureola*. Our findings highlight the importance of China's recent policy in strengthening measures to reduce hunting pressure on migratory birds and regulating the production and sale of mist nets. Similar efforts are needed across Asia to safeguard its wild birds, particularly migratory species.

A317 Talk

Seasonal mortality of migratory shorebirds caused by aquaculture deterrence nets and socioeconomic drivers of their use along the East Asian–Australasian Flyway

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Keywords: Deterrence, East Asia-Australasia Flyway, Human-bird conflict, Shorebirds, Socioecnomics, Migration

Migratory shorebirds in the East Asian–Australasian Flyway (EAAF) have experienced severe population declines, yet the impacts of direct mortality associated with coastal aquaculture remain poorly understood. We combined ecological surveys of shorebird mortality with a socio-economic survey of 460 aquaculture farmers across the coastal areas in southeastern China. Field surveys revealed widespread mortality caused by deterrence nets used to protect razor-clam seedlings from birds. Mortality was substantially higher during spring migration than in winter, suggesting that deterrence nets installed for winter razor-clam cultivation can become a major source of mortality when large numbers of migratory shorebirds arrive at coastal stopover sites in spring. Socio-economic surveys showed that farmers employed a variety of bird-deterrence methods, but the use of lethal deterrence nets was associated with both perceived bird-related losses and prevailing social norms within local communities. Together, our ecological and social evidence suggests that human–bird conflict in coastal aquaculture landscapes represents an important but underappreciated threat to migratory shorebirds. Effective conservation will require seasonally targeted management measures, including the timely removal of deterrence nets, while addressing local perceptions, social norms, and livelihood concerns to promote coexistence between migratory birds and coastal communities.

A319 Talk

Resolving the paradox of invasion biology: a case study of Silver-eared Mesia *Leiothrix argentauris*

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Keywords: Admixture, Genetic diversity, Introduced species

Human-mediated introductions of a species to a new area involving a small number of founders are expected to cause population bottlenecks and reduced genetic diversity. Yet, this loss is not always observed, a phenomenon known as the 'paradox of invasion biology'. Silver-eared Mesia *Leiothrix argentauris* is a popular species in the cage-bird trade native to Asia. It was firstly recorded in Hong Kong in 1970, where it has since established a breeding population. With the aid of whole genome sequencing, phenotypic and acoustic analyses, we aim to test whether the HKSAR population of *L. argentauris* has experienced a population size bottleneck and loss of genetic variation. Results establish that there is no significant loss of genetic diversity in the HKSAR population or severe population size bottleneck after introduction. Further analyses indicate the pattern of admixture from different sources. Phenotypic and acoustic analyses suggest that most of HKSAR birds belong to subspecies *L. a. ricketti*, but a small number can also be attributed to *L. a. argentauris/tahanensis*. In

general, our results are dedicated to investigate if admixture could explain the absence of loss genetic variation, and therefore contributing to the resolution of the paradox of invasion biology.

A320 Talk

Black-tailed Godwits connecting migration dots in Asian flyways

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Keywords: Asian flyways, Bangladesh, Black-tailed Godwits, Migration, Tracking, Himalayas and Tibetan Plateau

Two Asian flyways–Central Asian Flyway (CAF) and East Asian–Australasian Flyway (EAAF)–support approximately 50% of the world's migratory waterbird species, yet both remain critically understudied compared to American and European flyways. Bangladesh lies at the overlap of these two flyways, where large numbers of migratory species, including Black-tailed Godwits, spend their non-breeding period. They breed in northern Asia and migrate to south and southeast Asia, including Bangladesh. But their breeding origins, migration routes, timing, and stopover sites were previously unknown. To address this knowledge gap during my PhD, we deployed 60 GPS-GSM tracking devices on godwits captured in Bangladesh. Using morphometrics, genetic analysis, and tracking data, we confirmed the co-occurrence of three subspecies in Bangladeshi wetlands and revealed their migration routes, seasonal timing, and stopover site. The *limosa* subspecies followed a northwestern route to Kazakhstan and Western Siberia, whereas *melanuroides* and *bohaii* subspecies took a northeastern route to Mongolia and Eastern Russia. All subspecies crossed the Himalayas and Tibetan Plateau, reaching altitudes of 6–7.5 km, challenging the existing heat-avoidance hypothesis for high-altitude flight. The Tibetan Plateau emerges as a major barrier constraining migration timing in the CAF, showcasing it as an important theatre for comparative flyway research.

A321 Poster

‘Periodic Table’ of forest birds in Vietnam

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Keywords: Forest birds ornithocomplexes, Vietnam, Lowland and mountain forests, Role in ecosystems, Spatial and trophic parameters of the ecological niche, Anthropogenic impact

One of the areas of research conducted in Joint Vietnam-Russia Tropical Center since 1989 is the study of the structure and functioning of forest ecosystems. The role and position of birds in the forest ecosystems have been studied rather detail, but the results were not presented widely so far. Here we present an approach to describing the role of bird species in the forest ecosystems of Vietnam and the typology of the forest ornithocomplexes they form. The specificity of them is related to the specifics of ecosystems of lowland and mountain forests distributed over expanded meridional gradient and transformed by active anthropogenic impact. The specific characteristics of individual elements of a particular forest ornithocomplex include its taxonomy, spatial and trophic parameters of the ecological niche, abundance, and features of breeding biology. We also use results of morpho-functional analysis of the jaw apparatus of a number of forest bird groups as a basis for conclusions of their fundamental trophic adaptations. Based on the study of the bird characteristics in 36 forest regions, we identify several types of forest ornithocomplexes and briefly characterize the specifics of each of them as elements of the most complex ecosystems of Vietnam.

A322 Poster

Reliability of BirdNET for target species detection and the implications for interpreting migratory bird phenology in Jahoo, Cambodia

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Keywords: Bioacoustic Monitoring, BirdNET Analyzer, Migration, *Pitta moluccensis*, *Phylloscopus inornatus*, Passive acoustic monitoring

Passive acoustic monitoring is an increasingly important method for studying wildlife populations. Compared to traditional surveys, it is less invasive and enables data collection across broader spatial and temporal scales. However, manual verification and annotation of acoustic data are time-consuming, leading to increased use of artificial intelligence (AI)-based automated detection models, such as BirdNET. Nonetheless, as this is relatively new, challenges remain. BirdNET is biased towards North American and European species, while its predictive performance for Southeast Asian bird species remains limited. This is critical as many Southeast Asian countries are part of the East Asian Flyway and are important for studying migratory bird phenology. Hence, this study investigates how reliably BirdNET detects target species in Jahoo, Cambodia, and how it can be used to interpret migratory bird phenology. We evaluate BirdNET Analyser on two species, *Pitta moluccensis* and *Phylloscopus inornatus*. By analysing model confidence and accuracy across detections, species-specific thresholds were identified. BirdNET demonstrated high precision for both species (0.95 for *P. moluccensis*, threshold = 0.59; 0.99 for *P. inornatus*, threshold = 0.61).

Temporal detection patterns differed, with *P. moluccensis* mainly detected from April to August and *P. inornatus* October to April, consistent with existing literature.

A323 Talk

Tracking shorebird migration from Mongolian inland wetlands

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Keywords: Inland wetland, Shorebird, Wader, Migration connectivity, EAAF, Tracking

Mongolia hosts extensive inland wetlands that provide important breeding habitat for migratory shorebirds within the East Asian–Australasian Flyway. However, migratory connectivity of inland-breeding shorebirds remains poorly understood, limiting effective international conservation planning. During 2025–2026, we deployed satellite transmitters on several breeding shorebird species, including the globally threatened Asian Dowitcher, in eastern Mongolia to investigate migration routes, stopover ecology, and non-breeding destinations. Birds were captured at key inland wetland sites in Far Eastern Mongolia and tracked throughout their annual migration cycle. Preliminary results reveal extensive migratory movements linking Mongolian breeding wetlands with coastal staging and wintering areas across East and Southeast Asia. Tracked individuals used a network of critical stopover sites during both southbound and northbound migration, with variation in migration timing, route selection, and stopover duration among individuals and species. Several birds undertook long-distance nonstop flights between inland Mongolia and major coastal wetlands. Our findings highlight the international importance of Mongolian inland wetlands and support regional conservation efforts across the East Asian–Australasian Flyway.

A324 Talk

Tracking Black-faced Spoonbill migratory corridors in East Asia's expanding offshore wind seascape

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Keywords: Migratory corridor, Black-faced Spoonbill, GPS tracking, Offshore wind development, Cumulative exposure

Environmental impact assessments for Asian offshore wind farms have mostly operated at the local project scale, yet rapid development requires flyway-scale assessment of cumulative

exposure across migratory regions. We used high-resolution GPS tracking of 43 Black-faced Spoonbills *Platalea minor* between 2019 and 2025 to identify population-level southward migratory corridors and assess their overlap with existing offshore wind farms. Corridors were mapped using line-based kernel density estimation. Southward migration was strongly coastal but included distinct offshore corridors. Core corridors (0–25% cumulative utilisation distribution) were concentrated around western South Korea, part of the southern Yellow Sea, the eastern Chinese coast from southern Jiangsu to northern Fujian, and western Taiwan. The southern Yellow Sea and parts of the Taiwan Strait also formed high-use offshore corridors (25–50%). Of 8,192 existing offshore wind turbines in Asia by the first quarter of 2025, 10.6% occurred within core corridors and a further 16.1% within high-use corridors. Spatial overlap varied regionally, and simple seaward displacement did not consistently reduce overlap, supporting region-specific siting strategies. These findings highlight the need to move beyond project-scale assessments towards flywayscale, corridor-informed offshore wind planning.

A327 Talk

Assessing urban green space stopover habitat for migratory landbirds in Shanghai

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Keywords: Migratory landbirds, Stopover ecology, Urban green space, East Asian Flyway, Habitat quality, Arthropod predation

Migratory landbirds depend on stopover habitats to rest and refuel, yet their habitat needs remain poorly understood in the East Asian Flyway, especially in highly urbanised landscapes. Shanghai lies along an important coastal migration region and has rapidly expanded its urban green spaces and forests, but it is unclear which forest patches provide functional habitat for passage migrants. This study examines how urban forest structure and food resources shape stopover use by migratory landbirds, and whether these birds contribute to arthropod regulation in urban forests. We combine standardised bird surveys, vegetation measurements, and food-resource sampling across approximately 100 forest patches representing major urban forest types in Shanghai. We assess how forest type, vertical vegetation structure, fruit availability, and arthropod resources relate to migrant diversity and seasonal habitat use. In a subset of sites, we use bird-exclusion experiments to compare arthropod communities with and without bird access, providing a simple test of bird predation effects. We expect structurally complex forests with richer food resources to support higher migrant use, and bird predation to measurably influence arthropod communities. The study aims to translate ecological monitoring into practical indicators for biodiversity-friendly urban forest management.

A328 Poster

Northward range expansion in two tropical bird species with modeling for climate change

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Keywords: Climate change, Range expansion, tropical ecology, Western Ghats, Species Distribution Modeling

Poleward distributional shifts are taking place in many taxa across various parts of the globe in response to climate change. This has been observed in the changes to the elevational and latitudinal distributions of many species. This communication looks at two northward expanding bird species from the tropical region of India. Recently, northward range expansions was observed in Sri Lanka Frogmouth *Batrachostomus moniliger*, endemic to Western Ghats and Sri Lanka. Further, observational data indicating a similar northward range expansion in another endemic bird species, the Broad-tailed Grassbird *Schoenicola platyurus*, came to our attention. Based on it this paper describes the range extension of that species. It uses the observational data of *S. platyurus*, along with that of the *B. moniliger* to model the possible impact of climate change on these species of Western Ghats. We used 220 records of *S. platyurus* and 77 records of *B. moniliger*, together with 19 bioclimatic predictors to develop maximum entropy distribution model for each species projected into four climate change scenarios. Our projections showed further northward expansion in *B. moniliger* but also at the same time a significant reduction in the distribution ranges for both species in most of the future scenarios.

A329 Talk

Biphasic habitats, landscape change, and species demography: insights from the Shola Sky Islands

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Keywords: Birds, Sky Islands, Genomics, Gone, PSMC

Biphasic habitats — where two distinct habitat types co-occur within a single climatic zone — offer rare opportunities to disentangle the effects of climate and land cover change on species ecology and demography. The Shola Sky Islands of India, comprise a matrix of cloud forests and grasslands harbouring high levels of endemism. Over a century, this landscape has been substantially altered by timber plantations and woody invasive encroachment into native grasslands. Using satellite imagery, historic maps, large-landscape occupancy surveys across a four-year period, we demonstrate that forest birds are colonising invasive-dominated habitats while grassland-associated species show evidence of decline. To investigate longer-term demographic consequences, we sequenced whole genomes of 80 individuals of the endemic White-bellied Sholakili across populations with contrasting

landscape change histories. Linkage disequilibrium-based demographic reconstruction (GONE2), revealed correlations between habitat alteration trajectories and fluctuations in effective population size (N_e) over the past 100 generations. Expanding the temporal lens, N_e trajectories from ~100 individuals across 15 species over millennial timescales indicate that montane specialists, whether forest or grassland-dependent — maintain more stable population histories, while generalists exhibit greater demographic fluctuation across paleoclimatic cycles. Vegetation structure mediates short-term demographic responses, while species ecology shapes long-term sensitivity to climatic variability.

A330 Poster

Bird community responses to coffee shade lopping in the Western Ghats

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Keywords: Agro-ecology, Coffee agroforests, Shade pruning, Insectivorous birds, Foraging niche, Niche distribution

Native biodiversity can find a home on coffee agroforests, especially bird communities drawn to shade trees. However, the prevalent practice of pruning shade trees in coffee agroforests impacts such communities. Changes in habitat structure affect birds in various ways, including reduced food availability, increased exposure to predators, and altered foraging behaviour. To understand how habitat alteration may impact the functioning of birds, it is important to first understand their niche patterns and distribution. For our study, we selected a forest and coffee agroforests in the Western Ghats, India, representing a gradient of shade management intensity. Through point sampling and walking trails in the forest and coffee agroforests, we recorded the vertical foraging strata, substrate use, and behaviour of the birds observed. We investigated shifts in the abundance and composition of birds and examined changes in their foraging niches (niche position, width, and overlap). We found that the overall abundance of birds decreases as shade management intensity increases. Different guilds of birds exhibit varying patterns of niche shifts in response to changes in shade management intensity. The study shows that, when it comes to birds, coffee grown under high-intensity shade management has little conservation value, despite its ability to boost short-term yields.

A332 Talk

Conservation efforts and climate warming increase waterbird abundance along the coasts of the China

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Keywords: Waterbirds, Abundance, Northward shift, Coast of the China Seas, Global change, Intertidal wetland

Assessing species population trends is fundamental to understanding the impacts of threats and to evaluating the effectiveness of conservation efforts. Coastal wetlands along the coasts of the China Seas provide vital habitats for many waterbird species, yet have experienced substantial habitat loss and other threats over recent decades. Nevertheless, the population trends of waterbirds and their drivers in this region remain understudied. Using 15 years of monthly synchronized surveys across eight sites spanning 2,100 km along the coasts of the China Seas, we documented a substantial increase in wintering waterbird populations. Population-level analyses revealed that within each species, populations increased more at sites with greater expansions in tidal flat area and at higher latitudes experiencing more marked winter warming. These results demonstrate that recent conservation efforts and climate change have contributed to the increase in the abundance of wintering waterbirds along the coasts of the China Seas. Our study highlights the benefits of increased conservation efforts in the region and the importance of accounting for climate-driven northward shifts in abundance when prioritizing future actions for effective wildlife conservation and habitat management.

A333 Talk

Disentangling climate signals from survey effort in new bird distribution records across China

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Keywords: Biodiversity monitoring, Climate change, New distribution record, Observation bias, Range shift, Survey effort

New distribution records are often treated as fingerprints of climate-driven range shifts, yet they can conflate ecological redistribution with observation bias. We asked how much of the

accumulation of new records reflects warming and how much reflects survey effort. We assembled 1,076 provincial-level new records for 588 bird species across China from 2000 to 2025 and used a discrete-time hazard model to estimate the annual risk of a species being first recorded in each province. Warming relative to each species' historical range and survey effort contributed comparably (hazard ratios 1.36 and 1.40 per standard deviation) and interacted negatively, so warming mattered most where few people were looking. The return on survey effort declined over two decades, whereas the effect of warming did not. By 2050, projected numbers of new records differed little between emission scenarios but more than doubled if survey effort kept growing, and most of this increase lay outside the conditions observed so far. New records therefore carry a climate signal, but reading it requires modelling the observation process. Our study provides a framework for separating ecological redistribution from observation bias and identifies climatically exposed, under-surveyed regions as priorities for future biodiversity monitoring.

A334 Talk

Satellite telemetry solutions for monitoring diverse Asian bird species

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Keywords: Satellite telemetry, Bird monitoring, Multi-transmission mode, Lightweight tracker, Movement ecology, Biodiversity conservation

This work discusses satellite telemetry for Asian birds, with tailored solutions for different species. Available transmission options include Ubilink satellite, 4G/5G cellular network, wireless network and mobile gateways, which can work independently or collaboratively. The system collects five categories of data: location, environment, behavior, images and audio. Lightweight trackers suit birds of all sizes. Edge computing and on-board behavioral analysis effectively lower data transmission volume and device power consumption. These solutions have been applied to movement ecology research on cranes, geese, raptors, shorebirds and passerines. They have supported hundreds of publications from Asian research groups, laying a solid technical foundation for avian ecological studies and biodiversity conservation.

A335 Poster

Pilot testing bird ringing in the University of the Philippines Diliman

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Keywords: Bird ringing, Bird morphometrics, Breeding data, Ringing station, Wing moult

Bird ringing is an established method for studying birds, allowing us to gather information like morphometrics and breeding phenology. It works best when performed long-term and regularly to obtain recaptures, but ringing activities in the Philippines are short-term project-based efforts. A huge knowledge gap exists in the basic biology of Philippine birds, which constant ringing efforts can help address. We established a ringing station within the

University of the Philippines Diliman, where we captured birds from January to September 2026 using canopy and mist nets. For each bird captured and ringed, we recorded morphological data and took images. We report a passive capture effort score of 6,544 meter-hours (169.5 hours x 803 passive net meters) and a capture per unit effort of 0.6 (101 captures / 169.5 hours of effort). We caught 96 unique individuals from 14 species, mostly residents (e.g., *Pycnonotus goiavier* and *Passer montanus*), and migrants (e.g., *Lanius cristatus* and *Motacilla cinerea*), and averaged 5.6 captures per day. We present a summary of ringing records, notable moult and breeding data, and recommendations for sustainability. Despite our efforts, the low capture rate reveals the challenges of bird ringing in the Philippines.

A337 Poster

Avian diversity responses to land-use change and agricultural transition in an agricultural landscape of Southwestern China

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Keywords: Farmland birds, Life-history traits, Agricultural transition, Decadal dynamics, Decadal dynamics

Avian populations are declining in agricultural landscapes worldwide. We investigated the impacts of land-use changes on farmland birds around Erhai Lake, China. Birds, crops, and non-crop vegetation were surveyed across 20 1 km × 1 km plots during the 2022–2023 winter seasons to evaluate functional trait-environment relationships. Fourth-corner modeling revealed distinct trait-specific responses: granivores and medium-sized birds correlated positively with old fallow, while omnivores and carnivores favored grassland. Insectivores and large-sized birds preferred high crop heterogeneity. Foraging-wise, arboreal and mixed foragers correlated positively with crop heterogeneity and woodland, whereas ground and aerial foragers responded negatively to woodland and non-crop heterogeneity, respectively. Resident birds clustered in lower grassland coverage, while migratory birds showed no distinct spatial trends. Long-term comparisons using the log-response ratio (lnRR) indicated that, except for mixed foragers, the abundances of all functional groups increased over the past decade. Among 57 shared species, 23 (e.g. Bubulcus ibis, Motacilla alba) increased significantly, whereas four (e.g. Siberian Stonechat) declined. Overall, the widespread recovery of most functional groups was primarily attributed to a winter agricultural transition—characterized by a shift from intensive, large-scale garlic cultivation to traditional cropping—alongside the proliferation of small and micro wetlands, which collectively enhanced food and water availability for avian communities.

A338 Poster

Occupancy-based monitoring reveals a decline in the breeding population of the Australasian Grass-Owl in Taiwan

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Keywords: Australasian Grass-Owl, Occupancy model, Population monitoring, Conservation biology

The Australasian Grass-Owl *Tyto longimembris pithecops* is an endangered resident owl in Taiwan that inhabits lowland grasslands and agricultural landscapes. Due to its nocturnal behavior and low detectability, reliable population assessments remain challenging. To establish a standardized monitoring framework for this species, occupancy-based playback surveys were first conducted across southern Taiwan in 2021 breeding season. In 2025, the monitoring program was expanded to add central Taiwan using a comparable survey design in 180 sites. The estimated breeding population in 2025 was 110.2 pairs in southern Taiwan and 5.8 pairs in central Taiwan. Comparison with the 2021 survey indicated a decline in the southern breeding population from an estimated 163.8 pairs to 114.4 pairs in 2025, representing an approximate 30% reduction over four years. Although estimates varied slightly among candidate models, all analyses showed a consistent declining trend. Our results provide one the of the first standardized assessments of population change in the Australasian Grass-Owl and highlight the importance of long-term monitoring for evaluating conservation outcomes in rapidly changing lowland landscapes. The observed decline underscores the need for continued monitoring and habitat conservation for this endangered owl.

A339 Talk

Mangrove minstrels: passive acoustic monitoring (PAM) in the Las Piñas–Parañaque Wetland Park (LPPWP), Philippines

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Keywords: Bioacoustics, BirdNET, Passive acoustic monitoring, Long-term biodiversity monitoring, Migratory birds, East Asian-Australasian Flyway

The Las Piñas–Parañaque Wetland Park (LPPWP) is part of the East Asian–Australasian Flyway (EAAF) and is a crucial habitat for migratory species. Species monitoring is essential to track environmental and biodiversity changes, yet traditional survey methods are resource-intensive and time-consuming. Alternatively, passive acoustic monitoring (PAM) offers a non-invasive and long-term monitoring method to assess habitat health and monitor species communities. Implementing this approach, the Locally-Led East Asian Flyway Acoustics (LEAFA) Migratory Program collaborates across five countries to study migratory birds along the EAAF using PAM. A pilot study was conducted in LPPWP, where we placed two AudioMoth recorders from September 2025 to May 2026, operating the whole day. We

gathered a total of 48,097 1-minute recordings, with five LEAFA target species detected using BirdNET Analyzer Version 2.2.0. Monthly analysis revealed differences in temporal acoustic activity and species occurrences. The highest species counts were recorded from December to February, coinciding with the peak migration season. Our findings support the importance of LPPWP as an overwintering grounds for threatened migratory birds in the Philippines which warrants long-term monitoring. Thus, the study demonstrated the potential of PAM and automated classification models to survey habitat health and bird communities in LPPWP and other ecosystems.

A340 Talk

Developing automated bird call classifiers for Philippine species

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Keywords: Bioacoustics, Philippine Nightjar, Spatiotemporal analysis, Urban bird ecology, BirdNET Analyzer

Passive acoustic monitoring (PAM) and species recognition models provide a promising approach for large-scale, rapid biodiversity monitoring, but their performance remains largely understudied for Philippine birds. As part of a broader effort to develop and evaluate acoustic monitoring tools for endemic bird species, such as the Philippine Scops-Owl and Luzon Hornbill, our study conducted a preliminary assessment on the performance of BirdNET Analyzer v2.4.0 model in detecting the Philippine Nightjar (*Caprimulgus manillensis)*. We collected acoustic recordings across the University of the Philippines Diliman campus from January to September 2026 and analyzed them using BirdNET, with a subset of detections validated through manual review. Across 36 recording locations surveyed, Philippine Nightjars were detected at 78% of sites, mostly in layered open forest habitats, and vocalized throughout the night. Model performance varied depending on the temporal scale of analysis. At the 3-second window level, BirdNET achieved a recall of 39.49% and a precision of 95.18%, indicating that detections were highly reliable but that some vocalizations were missed within individual analysis windows. At the 2-minute audio level, recall increased to 97.40%, with a precision of 92.98%, demonstrating the model's ability to detect the species across longer recordings. Our initial results showcase the utility of BirdNET for detecting Philippine Nightjars calls and provide insights into the species' spatio-temporal activity patterns. This work further contributes to the growing application of automated bioacoustic monitoring in the Philippines and the development of future species-specific acoustic classifiers for Philippine avifauna.

A341 Poster

The human dimensions of vagrant bird sightings in Japan: coordination among stakeholders for voluntary ecotourism

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Keywords: Human dimensions, Vagrant birds, Coordinate, Stakeholders, Management, Ecotourism

Existing human dimensions research predominantly focuses on planned ecotourism or chronic human-wildlife conflicts. However, theoretical frameworks addressing 'spontaneous ecotourism'—triggered by unpredictable vagrant birds arriving from Eurasia or North America—remain significantly underdeveloped. This study addresses this gap by asking: how can local governance structures effectively manage the acute, highly localized conflicts caused by sudden influxes of birdwatchers? Using comparative case study methods, we combine literature reviews, secondary analyses of city reports, and documented responses to past stray bird incidents in Japan. Analysis suggests that traditional intensive wildlife management is often insufficient for sudden outbreaks of visitor conflicts. Instead, there needs to be an entity capable of effective control and coordination among stakeholders, with municipalities coordinating early action in collaboration with community councils, conservation NGOs, and birdwatching networks, establishing observation zones, communicating ethical guidelines, and mediating resident-visitor relations. The study contributes to human dimensions research by conceptualizing mechanisms for transient and unpredictable wildlife events. It also highlights the need for proactive, community-integrated visitor management in spontaneous ecotourism.

A342 Poster

Birdz n the Metro: Evaluating avian seed dispersal in Metro Manila green spaces using trait-matching

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Keywords: Avian frugivory, Trait-matching, Beak-gape size, Seed-dispersal, Green spaces, Urbanization

There are around 82 species of avian frugivores in the Philippines, ranging in size from small-bodied to large-bodied, responsible for the seed dispersal of a variety of plants. However, anthropogenic threats are causing declines in large avian frugivores, potentially altering the avian frugivore community and affecting seed dispersal services. One of the ways to evaluate this skew in diversity is through trait-matching, which links specific traits of birds, trees, and fruits to explain frugivory networks. Lower frugivore diversity is known to downsize correlations in trait-matching, such as between beak gape size and the size of fruits

swallowed , thus making it a potentially useful metric for evaluating anthropogenic impacts, such as urbanization, on biodiversity. No published studies from the Philippines have examined trait-matching in avian frugivory thus far, so our research aims to address this gap. To identify frugivory links, we conducted focal tree surveys at the University of the Philippines Diliman as our study site, one of the last remaining green spaces in the highly urbanized Metro Manila, and supplemented this with citizen science data from bird-photography forums. The most common frugivores were small to medium-sized and could only swallow fruits up to 10 mm in diameter. Trait matching of bird and fruit traits revealed moderate correlation between bird beak gape size and fruit size; however, the absence of large frugivores is apparent.

A343 Talk

Frozen flight: biobanking for avian conservation

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Keywords: Zoos, Biobank, Cryopreservation, Cell culture, PGCs

The accelerating biodiversity crisis demands urgent and systematic biobanking of biological materials to preserve the genetic and cellular foundations of life before they are lost forever. Birds present a particular challenge: rapid extinctions across island ecosystems, complex reproductive biology, and logistical barriers to sample collection make avian species both a conservation priority and a technically demanding target for biobanking. To secure a lasting legacy, we must integrate biobanking into conservation activities, linking living collections with frozen repositories so that animals today also safeguard the genetic potential of tomorrow. By coupling frozen repositories with living collections, conservation can overcome the constraints of space and time, transforming biobanks into engines of resilience, restoration, and innovation. In an era of accelerating biodiversity loss, biobanking should not be viewed as a last-resort measure. Instead, it must be embraced as a proactive, central pillar of the global conservation strategy – ensuring that the genetic options necessary for future recovery and adaptation are preserved today.

A344 Talk

Multi-scale movement patterns of migratory birds and conservation of key lake habitats in East Asia

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Keywords: Avian migration, Movement ecology, Migratory waterbirds, GPS tracking, Habitat conservation, China

Movement is a fundamental feature of living organisms and a key basis for maintaining Earth's vitality. Birds, comprising about 11,000 species and more than 50 billion individuals globally, move across diverse landscapes through migration, foraging, and other behavioral processes, completing recurrent life-cycle movements. Based on high-frequency, minute-

level GPS data from 39 White-naped Cranes, 9 Siberian Cranes, and 24 Oriental White Storks, we examined avian movement patterns across multiple spatial and temporal scales. We further integrated satellite-tracking data from 647 migratory waterbirds with Sentinel-1 SAR observations to analyze how bird distributions respond to lake water-level dynamics across 70 important lakes in the middle and lower Yangtze River floodplain. The results show that movement patterns can be quantified from individual to population levels, including annual migration schedules and daily movement distances. The extent of lake drawdown zones, vegetation diversity within these zones, and lake water quality were the dominant environmental factors shaping waterbird abundance and diversity. Wintering waterbirds were mainly concentrated in lakes with extensive seasonal drawdown zones, with Poyang Lake serving as the largest wintering habitat in the Yangtze River Basin. Key habitats showed spatial mismatches with existing protected areas, suggesting the need to expand or adjust conservation boundaries.

A345 Talk

Niche differentiation drives contrasting climatic responses of two sympatric pheasants

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Keywords: Silver Pheasant, Elliot's Pheasant, Species distribution model, Niche differentiation

We integrated occurrence and camera-trap data to build optimized MaxEnt models, comparing Silver Pheasant (SP) and Elliot's Pheasant (EP). SP currently has 186.40×10^4 km² suitable habitat, primarily constrained by temperature seasonality (>60% contribution), indicating a broad niche. It was extensive during the Last Glacial Maximum (LGM) (192.77×10^4 km²) and remains stable under future scenarios ($184.13–193.25\times10^4$ km²), with centroid anchored in the Nanling Mountains (25.21°–26.30°N, 109.38°–110.92°E), showing strong climatic resilience. In contrast, EP has only 126.04×10^4 km² current habitat, highly dependent on annual precipitation (BIO12, 60.4%), reflecting a narrow niche. It peaked in the mid-Holocene (132.56×10^4 km²) but contracted during the LGM (125.95×10^4 km²); future projections indicate consistent loss (to 111.88×10^4 km² under SSP2-4.5), with centroid shifting irregularly within 26.56°–27.62°N, 113.20°–115.90°E, signalling high vulnerability. Overlay with nature reserves reveals spatial discrepancies: in the Wuling Mountains, protected areas cover EP's high-suitability habitats more than SP's, underscoring habitat heterogeneity and differential conservation effectiveness. Overall, niche breadth drives their divergent adaptive trajectories (SP stable vs. EP vulnerable), and their contrasting spatial relationships with existing reserves highlight distinct conservation priorities.

A346 Poster

Comparison of automated and manual acoustic identification on estimates of bird species richness in the University of the Philippines, Diliman

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Keywords: BirdNET, bioacoustic, AI, Bird calls

Traditionally, monitoring avian communities traditionally relies on visual and auditory detection by experienced observers. With recent advances in bioacoustics , automated identification models like BirdNET, a deep convolutional neural network that can identify up to 6,522 bird species globally, offer a scalable complement. However, many Philippine bird species are absent from this global model. To evaluate the complementarity of these two approaches, we compared the number of species detected via expert listening with those identified by BirdNET. We first trained the BirdNET v2.4.0 model to detect the Philippine Pygmy Woodpecker (*Yungipicus maculatus*) to ensure coverage of known bird assemblage in the study site. Species detections from both methods were compiled and subjected to Spearman's rank correlation. Preliminary results show a statistically significant, moderate positive correlation between the two methods. Sites with higher species richness detected by manual auditory surveys corresponded to higher species richness through BirdNET. This finding supports the utility of automated acoustic analysis as a reliable complementary method for assessing avian biodiversity, particularly when expertise is limited.

A352 Poster

Regional Patterns of Multidimensional Avian Alpha Diversity in Relation to Elevational Range and Human Footprint

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Keywords: Avian diversity; Equal-area grids; Species richness; Phylogenetic diversity; Functional diversity; Community assembly; Environmental filtering

Variation in sampling-unit area can confound regional biodiversity comparisons. We used abundance data from 46 equal-area 10 * 10 km grid cells in Lancang County, Yunnan Province, China, to examine taxonomic, phylogenetic and functional avian diversity in relation to climate, topography, vegetation and human footprint. Human footprint was negatively associated with species richness and phylogenetic diversity (both $P = 0.04$), whereas elevational range was positively associated with species richness ($P = 0.04$) and functional diversity ($P = 0.03$). Mean pairwise phylogenetic distance increased with temperature and decreased with mean elevation; mean functional distance showed no

significant environmental associations. Null-model analyses showed that standardized effect sizes of phylogenetic pairwise and nearest-taxon distances increased with human footprint, while the latter decreased with elevational range. Standardized effect sizes of mean pairwise and nearest-taxon functional distances declined with NDVI, indicating a shift towards greater functional similarity relative to null expectations. These findings reveal spatial heterogeneity and dimension-specific environmental associations in avian alpha diversity after standardizing sampling-unit area. Environmental filtering and niche differentiation provide potential explanations for the observed structural patterns, although their relative contributions to community assembly remain unresolved.

A353 Talk

Elevational patterns of bird diversity in the Himalayas

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Keywords: The Himalayas, Multidimensional diversity, Bird assemblages

The Himalayas, the world's highest mountain system, exhibit complex topography and distinct elevational climatic zonation, making it an ideal setting for investigating elevational diversity patterns and community assembly mechanisms of birds. We compiled a list of 1,075 bird species, comprising 822 breeding birds overall, with 730,689, and 632 in the eastern, central, and western regions, respectively. Across all regions, species richness, phylogenetic diversity, and functional diversity exhibited a low plateau with a mid-peak pattern, peaking in low-to-mid elevations (900–1900 m) and declining toward higher elevations, accompanied by progressive phylogenetic and functional tree simplification. Mean pairwise phylogenetic and functional distance followed a U-shaped pattern; mean nearest taxon (functional) distance showed a gradual decline followed by an increase. The standardized effect size of diversity exhibited a pattern of decreasing with elevation, where community structures transitioned from overdispersion to clustering, community assembly shifted from competitive exclusion at lower elevations to environmental filtering at higher elevations. Diversity patterns were primarily driven by NDVI, mean annual temperature, and annual precipitation, with weaker effects of habitat heterogeneity and area. Our findings emphasize the need to strengthen conservation efforts, particularly in low-to-mid elevation valleys and hilly regions, to sustain Himalayan bird diversity.

A354 Talk

Universities as urban biodiversity refugia: a comparative assessment of avian diversity across five campuses in Pakistan

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Keywords: Avian diversity, Urban ecology, University campuses, Biodiversity refugia, Habitat heterogeneity, Urban conservation

Rapid urbanization across South Asia threatens avian diversity but university campuses remain overlooked as potential refugia. This study compares avian diversity across five University of the Punjab campuses in Pakistan: Quaid-e-Azam, Allama Iqbal, Gujranwala, Jhelum, and Khanspur. Standardized point-count surveys recorded 105 bird species from 47 families and 14 orders. Species richness varied markedly: Jhelum (69 species), Quaid-e-Azam (66), Khanspur (36), Gujranwala (35), and Allama Iqbal (25). Four conservation concern species were documented: Vulnerable River Tern and Tawny Eagle, and Near Threatened Alexandrine Parakeet and Red-headed Falcon. Insectivorous birds dominated (29% of guild), highlighting campus roles in pest regulation. Diversity indices revealed sharp contrasts. Quaid-e-Azam Campus showed high diversity (Shannon H' = 3.2, Simpson = 0.80). Jhelum, with extensive forest cover, supported the greatest richness and showed moderate similarity to Quaid-e-Azam (Sørensen = 0.57). In contrast, highly urbanized Allama Iqbal Campus displayed dramatically lower diversity (H' = 0.4, Simpson = 0.20), indicating dominance by urban-adapted generalists. These patterns confirm that vegetation complexity promotes avian diversity. This study provides the first quantitative evidence from Pakistan that vegetated campuses can support diverse bird communities and offers insights for integrating green spaces into urban conservation planning across rapidly urbanizing South Asia.

A355 Talk

Bird-pond ecotourism: a win-win strategy for forest biodiversity and rural development

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Keywords: Birdwatching, Feeding wildlife, Ecotourism, Conservation and development

Reconciling biodiversity conservation with sustainable rural development remains a critical challenge. Bird ponds are an emerging form of rural avitourism in China that combines managed water sources, concealed observation hides, and seasonal food provision to attract wild birds for viewing and photography. Across five regions in Yunnan, China, we paired each bird-pond area with a nearby control area and combined repeated point counts during non-feeding, early-feeding, and late-feeding periods with year-round camera trapping and household interviews. Point-count data provided no evidence that bird-pond and control areas differed in species richness, total abundance, or community composition, or that these contrasts changed among provisioning periods. Camera traps recorded ground- and understory-foraging birds at more than twice the adjusted rate in bird-pond areas and recorded dependent galliform young far more frequently, whereas human and domestic-animal detection rates were lower. These bird records indicate greater use of monitored locations rather than larger populations. Residents of bird-pond communities had higher adjusted conservation-awareness and bird-identification scores, whereas perceived income gains varied among communities operating under three governance arrangements. Seasonally provisioned bird ponds were thus not associated with broad reorganization of surrounding forest bird communities during the study period, but showed local ecological and social associations relevant to community-based conservation. With long-term ecological monitoring and greater attention to benefit distribution, this model could

strengthen local stewardship of wild birds in biodiversity-rich rural landscapes around protected areas.

A356 Poster

Coexistence mechanisms of morphologically convergent fulvetta species in the Gaoligong Mountains

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Keywords: Species coexistence, Fulvetta, Interspecific competition, Niche differentiation

How multiple species coexist within a single community represents one of the longstanding core research questions in community ecology. The key processes regulating species coexistence primarily encompass niche differentiation, dispersal limitation, and interspecific interactions. Among these processes, environmental factors shape community structure by filtering species adapted to specific ecological conditions, while interspecific interactions further modulate the co-occurrence patterns of species at the local scale. Our field surveys documented a total of 8 fulvetta species comprising 7,381 individuals. Significant interspecific differences in elevational ranges were detected across all fulvetta taxa ($p < 2.2e{-}16$), indicating clear vertical niche partitioning along the elevational gradient. Variance partitioning derived from HMSC outputs revealed that fulvetta distributions are predominantly governed by habitat type, latitude, and temperature. Most fulvetta species display congruent responses to environmental predictors: environmental filtering dictates broad-scale spatial patterning of fulvetta assemblages, whereas interspecific interactions mediate local-scale coexistence. Together, these two processes sustain stable community structure. Furthermore, the fulvetta clade exhibits moderate phylogenetic conservatism, demonstrating that evolutionary history imposes constraints on their ecological divergence.

A358 Talk

Population genomics underlying successful conservation of the Straw-headed Bulbul in its last global stronghold

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Keywords: Conservation genomics, Urban conservation, Museomics, Long-read genome assembly, Genetic connectivity

The Straw-headed Bulbul *Pycnonotus zeylanicus* is a South-east Asian lowland forest songbird facing dramatic range and population declines due to poaching and habitat loss. Currently, an estimated third to half of the global population resides in Singapore, a tropical island city-state of only 744 km², where strict anti-poaching enforcement is feasible, and the species has adapted to semi-urban landscapes. However, countrywide genetic connectivity and potential introgression from non-local populations due to historical cagebird releases have not been assessed. To investigate this, we constructed the first chromosome-level reference assembly for the species and resequenced whole genomes from 15 birds from captive breeding populations and 51 wild Singaporean bulbuls. We also resequenced 7 museum specimens from across the species' range to contextualize regional genomic variation. Results show strong gene flow between core Singaporean population centers but also limited admixture from non-local birds in some individuals, indicating potential historical impacts from cagebird releases. Importantly, population differentiation between distal regional populations was below subspecies levels, suggesting maladaptive introgression may not threaten population viability. Given the overarching threat to populations across South-east Asia, we propose that outbreeding within the secure Singaporean population may help preserve at-risk alleles and enhance genetic diversity for long-term population maintenance.

A359 Poster

From restoration to stewardship: nesting success, feeding ecology and youth participation in Blue-throated Bee-eater conservation in Pulau Ubin, Singapore

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Keywords: Blue-throated Bee-eater, Habitat restoration, Citizen science, Prey provisioning, Pulau Ubin, GLMM, NMDS

Habitat restoration and community engagement are both essential components of effective species conservation. At Pulau Ubin, Singapore, a habitat enhancement project introduced artificial nesting mounds of clay-mix, sand and granite dust to support the recovery of the Blue-throated Bee-eater at a previously unsuitable site. The successful breeding population provided opportunities to investigate chick feeding ecology through endoscope surveys and CCTV monitoring. With the support of trained staff and volunteers, nest development, chick growth and prey items were documented. Between 2021 and 2023, 35 nests were recorded, with granite dust substrates showing higher nesting attempts and success than other materials. Generalised mixed modelling and non-metric multidimensional scaling revealed that while weather variables did not significantly influence provisioning rates, prey composition varied with temperature, rainfall and wind, indicating behavioural adaptability in parental foraging. Building on these efforts, Youth Stewards for Nature (YSN) participants conducted bird surveys, including species identification, behavioural observations and habitat assessments at the enhancement site. Through mentorship by conservation staff, youths contributed to ecological data collection while developing conservation literacy, field

skills and environmental stewardship. Together, these findings demonstrate how habitat restoration coupled with meaningful youth participation can nurture the next generation of biodiversity stewards and strengthen long-term conservation outcomes.

A360 Talk

Behavioral phenotypes predict mortality risk in an endangered pheasant population

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Keywords: Mortality ecology, GPS tracking, Behavior personality, R*try Universit*eeves's Pheasant

Mortality is critical for population dynamics, especially in endangered species. Individuals face multiple sources of risk, yet the factors generating consistent differences in mortality among individuals remain poorly quantified. Such differences may arise not only from environmental exposure but also from individual characteristics, including sex, movement endurance, and behavioral personality. Using high-resolution telemetry, we tracked 98 Reeves's Pheasants *Syrmaticus reevesii* to quantify individual movement behavior and mortality patterns in this endangered species. We show that mortality was strongly concentrated in the breeding season (>85% of deaths), but showed no differences between sexes or landscapes with different levels of anthropogenic disturbance. Individuals approaching mortality exhibited a significant decline in movement endurance ($t = -2.391$, $p = 0.026$). In contrast, mortality risk did not differ between personality types (exploratory vs. conservative), despite consistent individual variation in behavioral tendencies. Our study suggests that increased mortality is primarily associated with seasonal ecological pressures and declines in individual movement endurance, whereas sex and stable behavioral personalities do not necessarily translate into divergent mortality outcomes.

A363 Talk

Avian migration timing advances linked to season-dependent population benefits

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Keywords: Abundance, Advancement rate, Full annual cycle, Migration timing, Season-dependent

Nearly half of the world's migratory species are experiencing population declines. While migratory species can adjust their migration timing in response to climate change, it remains unclear whether these shifts can insulate them from population decline. We compiled and analysed a global database pairing 4,351 population-level estimates of migration timing across 549 avian species, with corresponding population trends and climate change rates at breeding and nonbreeding grounds, coupled with a full-annual-cycle theoretical model. Building on evidence for an accelerating advancement in bird migration over the past century, we show that rapidly advancing migration is beneficial for bird abundance in the pre-breeding migration but detrimental in the post-breeding migration. The net demographic benefit hinges on pre-breeding advancement outpacing that in the post-breeding migration. This benefit is more pronounced in species with larger body mass. Our findings stress that population benefits of rapidly shifted migratory behaviour are season-dependent, underscoring the importance of full-annual-cycle perspectives for understanding and conserving migratory species under global change.

A364 Talk

Phylogeography of the Silver-eared Mesia *Leiothrix argentauris* complex

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Keywords: Biogeography, Phylogenetics, Museomics, Systematics, Conservation

The earth historic processes on Earth have led to the vast diversity of species and forms we see today. Of these processes, glaciation-interglacial cycles have played a significant role in the diversification of avifauna, particularly within Asia. This is especially the case for numerous montane systems, which reveals deeply diverged phylogenies as a consequence of glaciation events. The Silver-eared Mesia *Leiothrix argentauris* is a charismatic songbird species belonging to the laughingthrush family (Leiothrichidae), sedentary and restricted to montane and submontane habitats ranging from Sino-Himalayan region across Indochina and Peninsula Malaysia to Sumatra. Despite it being a wide-ranging and attractive species, mesias are not well studied. The taxonomy of mesias is mired in controversy and debate due to reliance only on traditional taxonomic methods such as morphology and morphometrics, with a lack of molecular studies carried out to clear the taxonomic confusion. Clarification of the taxonomy is crucial, especially for the conservation of the highly threatened populations in Sumatra. Using mitochondrial and whole genome sequences, this study is the first to investigate the evolution of mesias, highlighting the correspondence of their divergence with the late-Pleistocene climatic fluctuations and resolving the taxonomy of the complex.

A365 Poster

Contrasting dietary responses to temporal variation in two sympatric pheasants

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Keywords: Diet, Galliformes, Niche partitioning, Temporal variation, Sympatric species, Alpine ecosystem

In alpine ecosystems, temporal variation in food resources may influence resource use and interspecific relationships among sympatric species. Using fecal DNA metabarcoding, we investigated the dietary composition, temporal variation in resource use, and dietary niche characteristics of two sympatric pheasants, the Blue Eared Pheasant (BEP, *Crossoptilon auritum*) and Blood Pheasant (BP, *Ithaginis cruentus*), in May and November 2025, at the Nianlong Provincial Nature Reserve. We identifying 89 plant genera and 54 arthropod families in BEP, and 108 plant genera and 61 arthropod families in BP. Alpha diversity showed that BP had higher dietary Shannon diversity than BEP. Plant richness increased significantly in November for both species, and animal richness showed a significant Species × Period interaction. Bray-Curtis distances showed significantly different dietary composition between species and sampling periods. Dietary niche showed relatively stable or reduced niche breadth in BEP but niche expansion in BP in November. Interspecific dietary overlap increased in November. Overall, BEP exhibited relatively stable dietary composition, whereas BP showed stronger dietary adjustment and niche expansion. These contrasting dietary responses may help buffer potential competitive pressure associated with increased resource-use overlap, providing empirical evidence for understanding temporal resource-use dynamics and coexistence among sympatric species in alpine environments.

A366 Talk

Conservation of migratory shorebirds and marine ecosystems in the Gulf of Mottama, Myanmar

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Keywords: Spoon-billed Sandpiper, Local capacity, Hunting, Shorebird, Mangrove, Gulf of Mottama

The Gulf of Mottama Ramsar Site supports diverse coastal and marine wetland ecosystems such as intertidal mudflats some of the largest congregations of migratory shorebirds in Southeast Asia, including Spoon-billed Sandpiper and species associated with the Central Asian and East Asian–Australasian Flyway. The Biodiversity And Nature Conservation Association (BANCA) has worked widely in the Gulf to conserve migratory species and wetland ecosystems, organising waterbird monitoring surveys using SMART patrol in collaboration with local people through the Local Conservation Groups (LCGs) established here. Over time, BANCA has documented illegal fishing and illegal hunting affecting species, as is the use of mist nets to trap birds. To strengthen conservation here, BANCA has organised educational programmes to engage local communities, village leaders, local organisations and LCGs, while developing initiatives to tackle plastic pollution, improve solid waste management and awareness programmes. Furthermore, BANCA has also worked with local people to restore degraded coastlines through mangrove replanting in Mon State and is

working to secure official, long-term legal protection for the community-owned restoration. Here, we report our efforts to address illegal fishing and bird hunting, build local conservation capacity and restore degraded mangrove forests within the Gulf of Mottama and the lessons learnt.

A367 Talk

Neurogenomic basis of female visual mate choice revealed by a customized awake fMRI in zebra finches

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Keywords: Zebra Finch, Visual mate choice, Awake fMRI, Neurogenomic basis

Visual signals are central to mate choice in social animals. However, specific visual traits driving sexual selection, as well as their neural and molecular bases, remain poorly understood. Here, we established an awake functional magnetic resonance imaging (fMRI) platform in Zebra Finches *Taeniopygia guttata* and integrated it with behavioral and transcriptomic analyses to dissect the neurogenomic mechanism of female visual preferences. We identified two key cues influencing female choice and demonstrated that their perception elicited neural responses. Transcriptomic profiling further revealed both shared and trait-specific molecular programs underlying these preferences. Together, these findings advance our understanding of the neural and molecular basis of visual mate choice in birds.

A368 Talk

Spatial isolation, interspecific interactions and habitat filtering jointly shape spatial patterns of avian diversity in the Three Parallel Rivers Region, northwestern Yunnan, China

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Keywords: Three Parallel Rivers Region, Bird diversity, Functional diversity, Community assembly, Spatial isolation, Habitat filtering

Spatial patterns of biodiversity along environmental gradients and their underlying mechanisms are central to ecology and biogeography. We investigated taxonomic, phylogenetic and functional avian diversity and community assembly in the Three Parallel Rivers region of the Hengduan Mountains, northwestern Yunnan, China, a highly isolated parallel mountain-valley system at the intersection of three global biodiversity hotspots. Using standardized point-count surveys across seven complete mountain slopes during

breeding and non-breeding seasons, we recorded 331 bird species and 45,408 individuals from 3,464 samples, excluding waterbirds and nocturnal species. We combined additive diversity partitioning, beta-diversity decomposition and null models with regression analyses and joint species distribution models incorporating environmental and spatial predictors. Community differentiation occurred both among slopes and along elevational gradients within slopes. Species turnover dominated taxonomic beta diversity, accounting for 91.6% of differentiation among slopes and 76.2-94.4% within slopes. Compositional dissimilarity was associated with environmental differences and topographic isolation. Functional conmmunity structure showed a clear west-east transition across the Biluo Snow Mountain ridge, with clustering in the west and predominantly overdispersed assemblages in the east. Joint models revealed substantial shared contributions of environmental, spatial and interspecific association components (overall McFadden's pseudo-R^2 = 0.56). These findings support the joint influence of environmental filtering and spatial isolation, alongside potential biotic contributions, in structuring avian communities across horizontal and vertical gradients.

A369 Talk

Globally endangered Egyptian Vultures strongly depend on human-mediated food resources in Asia: evidence from GPS tracking

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Keywords: Anthropogenic food subsidies, GPS telemetry, Home range, Movement ecology, Nest-site fidelity, Vulture Safe Zone

Anthropogenic food subsidies increasingly shape the ecology of obligate scavengers, yet their importance for Asian vultures remains poorly understood. We used GPS-GSM telemetry to quantify movement ecology and dependence on anthropogenic food resources in the Endangered Egyptian Vulture *Neophron percnopterus* in Nepal. 10 vultures (6 adults, 4 subadults) were tracked for up to 638 days (September 2024–June 2026), yielding >70,000 GPS locations. Movement-based kernel density estimation and GPS revisitation analyses quantified space use and visitation to municipal dumps, pig and poultry farms, and a Vulture Feeding Station. On average, 57.3% of GPS locations occurred within 1 km of anthropogenic food sources, with pig farms and municipal dumps accounting for most repeated visits. Adults maintained relatively small home ranges centred on breeding territories and feeding sites, whereas subadults ranged more widely but remained strongly food-associated. No individual showed regular seasonal migration; only one subadult made a single long-distance exploratory movement. Successful nests were closer to food sources than failed nests (17.2 vs. 58.4 km; n = 6), although the difference was not significant. Field surveys recorded up to 184 vultures of five species at farms and dumps. These findings identify anthropogenic food subsidies as a keystone resource, with important implications for Vulture

Safe Zone management, landfill and livestock waste regulation, and contaminant monitoring across South Asia.

A371 Talk

Enforcement actions relating to the illegal and unsustainable songbird trade in Southeast Asia

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Keywords: Songbird trade, Wildlife trafficking, Law enforcement, Seizures, Wildlife crime, Southeast Asia

The trade in wild-caught songbirds in Southeast Asia poses a significant threat to many native bird species. In recent years, there has been increased attention to the conservation impacts of this trade, and enforcement actions have responded accordingly. An analysis of 10 years of seizure and enforcement records relating to illegal and unsustainable songbird trade across Southeast Asia seeks to understand and update regional patterns of enforcement action, including identifying temporal and spatial trends, species involved, trafficking patterns, and enforcement outcomes. Records were compiled from government reports and open-source information covering multiple countries in the region. The analysis examines the volume and composition of seizures, geographic hotspots, transport routes, agencies involved in detection and interception, and resulting enforcement outcomes where information was available. The analysis reveals persistent cross-border and domestic trafficking, with shifts in trade routes and species composition over time. Enforcement efforts involved a diverse range of wildlife, customs, police, border control and quarantine authorities. The findings aim to highlight opportunities to strengthen inter-agency cooperation, intelligence-led enforcement, and policy interventions, within context of the wider criminal justice system, and a more holistic problem-solving framework beyond enforcement.

A373 Talk

Making CITES work for songbirds

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Keywords: International trade, CITES, Songbirds, Protection, Cooperation

International trade in songbirds poses an increasing threat to a growing number of species, driving population declines and elevating extinction risk. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is the world's primary international agreement for ensuring that international wildlife trade is legal, sustainable, and traceable. By regulating trade in listed species, the Convention provides an internationally coordinated framework for monitoring trade, preventing overexploitation, and supporting enforcement. It also obligates Parties to cooperate in preventing trade that violates national wildlife protection laws in countries of origin.
Despite mounting evidence that international trade threatens many songbird species, relatively few are currently listed under the Convention. This regulatory gap weakens global

efforts to address unsustainable exploitation, illegal trade, and the movement of species across international borders. The largely clandestine nature of illegal trade, facilitated through online marketplaces, informal trade networks, and mislabelled shipments, further limits effective monitoring and enforcement, making international cooperation essential. This presentation examines expanding the Convention for songbird conservation. I discuss how strategic listings strengthen trade monitoring, improve enforcement, facilitate international collaboration, and protect species threatened by international trade. I argue broader, proactive use of the Convention is essential to global songbird conservation.

A374 Talk

Three-dimensional forest architecture drives the vertical evolution of avian coloration

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Keywords: Plumage colouration, Macroevolution, Forest birds, Vertical stratification, Phenotypic divergence, Community assembly

The vertical stratification of vegetation represents a crucial but underexplored axis of ecological divergence in terrestrial biota, holding profound implications for the macroevolution of animal traits. While the effects of geographic gradients at macro scale such as latitude and elevation, on avian plumage coloration have been extensively studied, the influence of vertical stratification remains largely unexplored across the globe. Using colour data from 6,289 forest-dwelling bird species, together with phylogenetic, ecological and environmental analyses, we examined how forest vertical structure influences global patterns of plumage colouration. At the community level, we first revealed that the vertical differentiation of bird colours within communities is strongly shaped by forest structure globally. Forest height enhances colour diversity among strata, whereas canopy structural complexity limits it. At the species, canopy-dwelling species exhibit significantly higher colour saturation and diversity, as well as a higher prevalence of non-iridescent structural colour compared to understory species. Importantly, these vertical colour gradients also varied across major biogeographic realms, driven predominantly by the Neotropics and the Oriental region, suggesting that regional evolutionary history modifies responses to forest stratification. Together, our findings identify forest vertical stratification as a critical dimension of avian plumage colour evolution and distribution globally, highlighting how three-dimensional habitat structure shapes trait diversification across complex ecosystems.

A375 Poster

Illustrations of Handbook of the Birds of the World: datasets of RGB values and color classification of birds

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Keywords: Birds, Coloration, Data paper, Hand-drawn illustration, Image, Plumage

Plumage color, an important trait of birds, has been widely studied from the perspectives of taxonomy, macroevolution, biogeography, and behavioral mechanisms. However, quantifying avian plumage color remains challenging, and data on the classification and proportion of plumage colors at the species or subspecies level are rarely reported. Here, we collected all illustrations from the *Handbook of the Birds of the World Alive* (HBW Alive) and quantified them as RGB values. HBW Alive includes scientific illustrations of more than 10,000 species and subspecies on a uniform white background, which facilitates plumage quantification. We extracted RGB values from each image, excluding the white background, and applied the K-means clustering algorithm to categorize plumage colors into 24 groups. The complete datasets comprise 18,757 illustrations of 10,290 bird species, with RGB values of 1,000 pixels and the proportion of 24 colors recorded for each image. This dataset includes 5,288 subspecies, male and female plumages of 2,618 species, and more than two morphs of 456 species. Although illustrations have inherent limitations in capturing subtle color variations, this comprehensive dataset provides a valuable resource for investigating ecological, evolutionary, and biological questions across scales, such as species divergence, phenotypic variation in response to climate change and human activities, and global patterns of avian biodiversity.

A376 Poster

Genomic footprints of rapid demographic collapses and recovery in the Black-necked Crane *Grus nigricollis*

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Keywords: Population bottleneck, Genetic load, Genomic diversity

Rapid demographic declines are increasingly documented across diverse taxa, yet their genetic consequences remain debated. Under the small-population paradigm, such declines are expected to elevate genetic load and extinction risk, but empirical evidence of rapid recoveries from severe bottlenecks suggests a more nuanced reality. Here, we compared

historical and modern population genomic data of the Black-necked Crane *Grus nigricollis* to assess the genetic outcomes of an abrupt bottleneck in the 1980s. Modern genomes exhibit reduced diversity, heightened inbreeding, and an increased realized genetic load relative to historical genomes, confirming the bottleneck's immediate impact. However, we find that purifying selection remained effective during the collapse: highly deleterious alleles within runs of homozygosity were relatively purged, and highly conserved homozygous sites retained strong evolutionary constraint. This persistent selection likely mitigated the short-term severity of inbreeding depression. Collectively, our results show that rapid demographic recovery can coincide with ongoing purifying selection, potentially averting an immediate extinction vortex. Nevertheless, the overall elevation of genetic load may compromise long-term adaptive potential. These findings illuminate the complex microevolutionary responses to population crashes and emphasize the urgent need for proactive conservation before genetic erosion becomes irreversible.

A377 Talk

Rapid behavioural adjustment facilitates the formation of a novel migration route in swan geese

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Keywords: Swan goose, Migration route formation, Behavioral plasticity, Movement ecology, Migration strategy

Migration routes can change rapidly, yet the behavioural mechanisms that enable animals to establish new migratory routes remain poorly understood. We investigated a newly established breeding population of Swan Geese *Anser cygnoides* in Beijing by integrating whole-genome resequencing, satellite tracking, tri-axial accelerometry, and historical climate and land-use reconstruction. We showed that the Beijing population represents a recently diverged and genetically distinct breeding population with a previously undescribed migration route and a time-efficient migration strategy. We further found that rapid behavioural adjustment accompanied by changes in flight biomechanics may have facilitated the establishment of this novel migration route. Our findings provide a mechanistic framework linking population history, behavioural flexibility and flight performance, offering new insights into how migratory birds respond to environmental change and establish new migration routes.

A378 Talk

Demographic history of the Edible-nest Swiftlet *Aerodramus fuciphagus*: a species under heavy exploitation

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Keywords: Conservation genomics, Southeast Asian fauna, Wildlife trade sustainability, Human–wildlife coexistence

Edible-nest Swiftlets *Aerodramus fuciphagus* produce high-value edible nests, and intense harvesting of these nests has driven local population extinctions in Southeast Asia. To support sustainability, artificial swiftlet houses mimicking cave environments have been established, yet the demographic impacts of long-term exploitation remain unclear. To address this gap, we re-sequenced 40 Edible-nest Swiftlets from Malaysia, Vietnam and China, and investigated their phylogenetic relationships and demographic histories using both mitochondrial and nuclear genomic data. MtDNA revealed shallow divergence, and whole-genome analyses showed no clear geographical structure. Demographic reconstructions using the Sequential Markov Coalescent method indicated a general effective population size decline from 100,000 to 10,000 years ago, with the Chinese population continuing to decrease until recently. GONE analyses detected a population rebound in Vietnam and Malaysia around 200 years ago, but a sharp decline in China approximately 40 years ago. Despite these fluctuations, we found no significant loss of genetic diversity or increase in genetic load. Our findings suggest that habitat loss during the last glacial period shaped historical declines, whereas recent artificial nesting facilities and human harvesting did not evidently reduce population sizes. This implies that current exploitation practices may be compatible with genetic health, at least in the studied populations.

A379 Poster

Construction and practice of urban wild raptor rescue system: a case study of Shenyang Raptor Rescue Center

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Keywords: Raptor, Rescue, Practice, Bird veterinary medicine, Popular science, Technology

The Shenyang Raptor Rescue Center (founded in 1998) has established a standardized, end-to-end rescue system encompassing ‘rescue - treatment - rewilding - release,’ forming a complete closed-loop operation covering injury and illness assessment, clinical diagnosis and treatment, rehabilitation training, and scientific release. This provides systematic protection for the survival of wild raptor populations in the region. In terms of technological breakthroughs, the center has achieved several national firsts: completing the first talon reattachment surgery on a White-tailed Eagle in China, filling a technological gap in raptor

microsurgical repair; custom-designing a 3D-printed prosthesis for a Golden Eagle with a missing hand, exploring the application of digital technology in wildlife rehabilitation; and achieving the first successful artificial breeding and rewilding release of a goshawk in China, overcoming the technological bottleneck in developing the survival skills of artificially bred individuals in the wild. The rescue success rate remains stable at 70–75%, placing its technical capabilities among the top rescue institutions. At the same time, the center has established a volunteer service platform to carry out natural science education on a regular basis, transforming front-line rescue cases into public ecological education materials, and building a protection model of 'professional rescue + public participation'.

A380 Poster

Managing food resource in human-modified wetland for waterbirds – a case study in Deep Bay Area, Hong Kong

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Keywords: Waterbird, Conservation, Habitat management, Human-modified wetland, Macroinvertebrates

With rapid loss of natural coastal wetlands along the East Asian–Australasian Flyway (EAAF), human-modified wetlands had been an alternative habitat for migratory waterbirds in recent decades. Managing artificial wetlands to enhance their ecological value is crucial for future waterbirds conservation. Yet, the linkage between how pond management influences natural food resources (aquatic macroinvertebrates) and eventually, the effect on waterbird diversity in these habitats have remained understudied in East Asia. To evaluate the relationship between waterbird occurrences and aquatic macroinvertebrate diversity, we evaluated these two-trophic interactions across 86 pond-season pairs at the fishponds near Inner Deep Bay Ramsar Site, Hong Kong, using piecewise structural equation modeling (pSEM). Our results revealed seasonally decoupled ecological pathways between waterbirds' breeding and non-breeding season. During the non-breeding season, waterbird Shannon diversity significantly increased with species richness of aquatic macroinvertebrate, emphasizing the critical role of natural prey diversity during wintering period. Conversely, during the breeding season, direct management and physical constraints, such as fish stocking positively influenced waterbird diversity, whereas dissolved oxygen depletion and the presence of overhead plastics wires for scaring birds have severely suppressed waterbirds. This suggests that draining to increase accessibility of macroinvertebrates is more effective to be done in nonbreeding season.

A381 Poster

Ardeidae as reservoirs and domestic poultry as epidemiological bridges for parasite transmission to humans: a one health and socio-ecological perspective from Ketingan Village, Indonesia

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Keywords: One Health, Ardeidae, Domestic poultry, Parasite transmission, Human–wildlife interface, Socio-cultural factors

Ketingan Tourism Village is one of the seasonal roosting and activity sites for birds of the family Ardeidae during the rainy season. This area represents a unique socio-ecological system where wild birds, domestic poultry, and local communities coexist within the same environment. Such interactions may facilitate interspecies parasite transmission, particularly through agricultural landscapes and residential areas. Although the Ardeidae colony in Ketingan has been extensively studied from ecological and conservation perspectives, information regarding parasite dynamics and the role of socio-cultural factors in supporting human–wildlife coexistence remains limited. This study aimed to investigate the presence of parasites at the wildlife–livestock interface between Ardeidae birds and domestic poultry while exploring the socio-cultural factors that shape these interactions within a One Health framework. Fecal and skin samples were collected from Ardeidae birds and domestic poultry and examined, complemented by field observations and interviews with local residents. Preliminary findings revealed the presence of *Eimeria spp.* oocysts and spine eggs are suspected to belong to the family Schistosomatidae in fecal samples from Ardeidae birds. These findings suggest a potential health interface among wildlife, domestic animals, humans, and the environment. This study provides baseline information to support conservation strategies based on the One Health approach.

A382 Poster

Draft genome of the endangered South Philippine Hawk-eagle *Nisaetus pinskeri* enables genome-wide diversity and demographic history analyses

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Keywords: Endangered, Draft genome, Conservation genomics, Demographic history, Genetic diversity, Endemic

Southeast Asian raptors face mounting pressure from habitat loss and persecution, and genomic approaches have recently begun informing conservation decisions for the region's most threatened species. Among these, the South Philippine Hawk-Eagle *Nisaetus pinskeri*, an endangered raptor endemic to the southern Philippines, remains one of the country's least-studied birds of prey. Genetic data for the species have so far been restricted to short mitochondrial sequences, leaving its genome-wide diversity and population history entirely unknown. Here we present the first draft genome of *N. pinskeri*, assembled from blood samples of seven hawk-eagles held at the Philippine Eagle Center into a 1.14 Gb genome with 91.1% completeness and 19,465 annotated protein-coding genes. This resource revealed low genome-wide heterozygosity and no signals of inbreeding within the sampled population. It also enabled demographic history reconstruction using the Pairwise Sequentially Markovian Coalescent (PSMC) model, which revealed similar population fluctuations as other raptors. These findings establish a genomic baseline against which future conservation interventions can be measured. More broadly, this genome adds to the small but growing set of reference genomes for threatened Philippine endemic birds, supporting genomics-informed conservation in a globally recognised biodiversity hotspot with exceptionally high rates of avian endemism.

A384 Talk

Uncovering genetic diversity, inbreeding, and demographic history of the Critically Endangered Philippine Eagle *Pithecophaga jefferyi* through conservation genomics

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Keywords: Philippine Eagle, Conservation genomics, Genetic diversity, Inbreeding, Critically endangered

The Philippine Eagle *Pithecophaga jefferyi*, a critically endangered forest raptor endemic to the Philippines, has an estimated 64–223 breeding pairs remaining in the wild. To assess its genetic health beyond earlier mitochondrial studies, we generated a draft genome and evaluated genome-wide heterozygosity and inbreeding in 35 individuals, comparing eagles bred in captivity with those rescued from the wild. Our findings show that genome-wide heterozygosity was extremely low (0.000309), among the lowest reported for any raptor and comparable to other severely bottlenecked bird species. Furthermore, wild-rescued individuals showed significantly lower heterozygosity and higher inbreeding coefficients than captive-bred individuals (Wilcoxon rank-sum test, $p < 0.0001$), suggesting that the pre-existing captive breeding programme has been effective at avoiding related pairings even as the wild population continues to decline. Lastly, demographic history analysis revealed two bottlenecks and an ongoing population decline that predates the start of deforestation in the Philippines. Taken together, these findings show that low genetic diversity persists in the Philippine eagle regardless of population trends, and that recovery in population numbers alone cannot be assumed to reflect improved genetic health. Continued genomic monitoring is recommended to guide future conservation breeding decisions for this species.

A389 Talk

Netting of wild birds across Asia: what do we know and where do we go next?

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Keywords: Bird mortality, Hunting, Illegal taking, Mist-net, Threats, Pest management

Mist-nets are widely used for hunting and the unsustainable take of birds across Asia, yet their actual conservation impacts remain poorly documented. We synthesized available evidence on the extent and impacts of netting on wild birds across East, South, and Southeast Asia using four complementary data sources: expert questionnaires, a systematic review of the published literature, YouTube videos, and iNaturalist observations. We found that nets are employed for hunting, trapping for the pet trade, crop protection, and recreation, potentially affecting substantial number of both resident and migratory bird populations. We documented at least 377 bird species, including 212 migratory species associated with the East Asian–Australasian Flyway and 45 species of global conservation concern to be affected by mist nets. Despite these findings, only 15 peer-reviewed studies have explicitly investigated the ecological consequences of netting, indicating that this threat remains overlooked in conservation research. Our results suggest that netting is a far more widespread and a greater threat to wild birds than is currently recognized. Addressing this issue will require stronger regulation of net manufacture and trade, improved enforcement of wildlife protection laws, wider adoption of wildlife-friendly crop protection measures, and enhanced monitoring through coordinated research and citizen science initiatives.

A390 Poster

Habitat associations of open-country raptors in a rice-dominated landscape in Central Thailand

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Keywords: Habitat selection, Bird of prey, Rice intensification, Landbirds

Rice-dominated landscapes are expanding and becoming increasingly intensified across Asia, facilitated by improved irrigation systems, yet little is known about how these changes influence habitat use by raptors. We investigated habitat associations of six open-country raptors in the rice-dominated Central Plains of Thailand. Raptors were surveyed at 1,237 sampling locations, and species occurrences were modelled against land-use and habitat variables to identify key predictors of habitat use. Responses to rice intensification varied among species. Black-eared Kite *Milvus migrans lineatus* and Spotted Owlet *Athene brama* were less likely to occur in intensively cultivated areas, whereas Eastern Marsh Harrier *Circus spilonotus* showed a positive association. In contrast, rice intensification had no significant effect on Black-winged Kite *Elanus caeruleus*, Rufous-winged Buzzard *Butastur liventer*, or Pied Harrier *Circus melanoleucos*. However, the overall extent of rice cultivation was positively associated with the occurrence of these three species. Semi-natural habitat features also influenced their occurrence. Field margins were positively associated with four focal species, while scattered trees increased the likelihood of occurrence for Spotted Owlet and Rufous-winged Buzzard. These findings demonstrate species-specific responses to agricultural management and highlight the importance of retaining field margins and scattered trees to sustain raptor diversity in intensively managed rice landscapes.

A391 Talk

Who to help? Decision making during mobbing

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Keywords: Communication networks, Paridae, Anti-predator communication, Mobbing, cooperation, Mixed-species groups

Mobbing is an important anti-predator strategy where prey will harass, and sometimes attack a predator to drive it away. In birds, mobbing is accompanied by calls that contain information about a predator's threat and typically serve to recruit others. Conspecifics and heterospecifics recognize and understand these calls; this multi-species communication is hypothesized to create large community-wide anti-predator communication networks. Although thought to be important, communication networks remain poorly described and understood. How each species in the community responds to one another's calls, for example, remains largely unstudied. Our objective was to determine how different species make decisions about who to help mob. More specifically, determining if relationships between species are 1) generally uniform (i.e. all species respond equally to one another's

mobbing calls), or 2) are species-specific (i.e. each species' response depends on the identity of the caller). To answer this question, we experimentally instigated mobbing events by broadcasting mobbing calls from each of six common mobbing participants and recorded all responding species' behaviour. We found that while some species respond uniformly, others are more species-specific in their responses. Additionally, these responses were mediated by season – winter flocking vs. spring breeding.

A392 Talk

An introgressed haplotype decouples phenotype from genome-wide ancestry

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Keywords: Introgression, Great Tit complex, Phylogenomics, Hybridization, Whole-genome resequencing

Introgression redistributes genetic variation among diverging lineages, shaping evolutionary trajectories and contributing to phenotypic evolution. Yet how localized introgressed genomic regions can persist despite extensive genomic homogenization remains poorly understood. Here, we investigate the evolutionary history of the northeastern Iranian Great Tit *Parus major intermedius*, a grey-plumaged member of the Great Tit complex occurring at the eastern range margin of the green- and yellow-plumaged *major* lineage, adjacent to the grey-plumaged Central Asian *bokharensis* lineage, and long regarded as a putative hybrid. We find that *P. m. intermedius* retains predominantly *major*-derived genomic ancestry despite its grey plumage, revealing extensive genomic homogenization across the genome. Surprisingly, a single localized introgressed haplotype on chromosome 24 retains *bokharensis*-derived ancestry, exhibits elevated genomic differentiation relative to the genomic background, and overlaps the carotenoid-processing gene *BCO2*, a strong candidate underlying plumage pigmentation. Our findings provide a genomic explanation for the discordance between phenotype and genome-wide ancestry, demonstrating how localized introgression can preserve genomic regions associated with phenotypic divergence despite extensive genomic homogenization. This system illustrates how individual genomic regions can retain distinct evolutionary histories long after the surrounding genome has largely homogenized.

A394 Talk

Flexible tool use in introduced Tanimbar Corellas

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Keywords: Tanimbar Corella, Tool use, Behavioral flexibility, Cognition, Introduced, Naturalized

Widespread, flexible tool use in wild birds is extremely rare. In fact, all three known avian species, in which tool use is habitual in wild populations, show some degree of heritability in their tendency to use sticks for food extraction and/or have morphological adaptations to do so. Tanimbar Corellas *Cacatua goffiniana*, do not show stereotyped tool use tendencies, but they can innovate tool use in captivity. Notably, the use of a set of different types of foraging tools to achieve a single goal was observed in a group sampled from a wild population on the Tanimbar Islands, Indonesia. However, only a few individuals within this group were proficient tool users and direct observational confirmation of free-ranging, tool-using individuals in their native habitat is still lacking despite intensive observational effort. In the presented study, we observed Tanimbar Corellas of a naturalized population in Singapore and found diverse uses of tools from different materials in different locations. We will present our findings on tool variety, diverse tooling techniques, and different target fruits and discuss their implications regarding the emergence of flexible tool use.

A395 Talk

A non-monotonic recovery against the European decline: 14 years of citizen science monitoring of wintering Northern Lapwing *Vanellus vanellus* in Taiwan

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Keywords: *Vanellus vanellus*, Population trend, Citizen science, East Asian–Australasian Flyway, Taiwan, Northern Lapwing

Migratory shorebirds of the East Asian–Australasian Flyway (EAAF) are declining, yet inland Asian wintering sites are poorly monitored, and the Asian status of the Northern Lapwing *Vanellus vanellus* — down ~71% in Europe since 1980 — is largely unknown. We analysed a 14-year (2013–2026) standardised citizen science dataset from Yunlin, Taiwan, one of East Asia's largest wintering concentrations. Annual grid counts (2 km × 2 km; n=313) were modelled with negative-binomial GLMMs and TRIM indices, with phase-specific and habitat analyses. The population increased significantly overall (TRIM λ = 1.095, 95% CI 1.071–1.120; GLMM model-adjusted counts λ = 1.090, 95% CI 1.021–1.200), although the grid-level GLMM slope was not significant (λ = 1.083, 95% CI 0.911–1.287), and grid occupancy rose from 15.6% to a record 29.0%. This mean masked a non-monotonic trajectory: stability (2013–2016), decline to ~40% of

baseline by 2018 (2013–2020 λ = 0.857, 95% CI 0.807–0.910), then rapid recovery from 2021 (λ = 1.190, 95% CI 1.125–1.259), with model-adjusted counts reaching 13,530 individuals in 2026. Core grids carried higher rice-paddy cover, and total agricultural cover showed a pattern consistent with an occurrence threshold. This is, to our knowledge, the longest continuous record for wintering Northern Lapwing in East Asia and one of few positive trends range-wide; cold-wave events and breeding-source productivity are candidate, untested explanations for the decline and recovery. Our results identify flooded rice-paddy agriculture as a conservation priority and provide an empirical basis for embedding citizen science monitoring in IUCN Red List assessment and EAAF conservation planning.

A398 Poster

Communicating danger through visual and vocal signals in the Barn Swallow *Hirundo rustica*

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Keywords: Alarm calls, Anti-predator behaviour, Barn Swallows, Communication, Visual signals, Vocal signals

Many bird species have evolved complex visual and vocal signals that convey information about predator identity or danger level, enabling receivers to take appropriate antipredator behaviors. Barn Swallows *Hirundo rustica* possess a rich repertoire of visual displays and vocalizations, some of which may have evolved under diverse predation pressures, yet their functions remain poorly understood. We tested behavioral responses of breeding Barn Swallows to taxidermic mounts of a Black Drongo (nest predator), a Peregrine Falcon (adult predator), and an Oriental Turtle-Dove (control). Each mount was presented either 2 or 5 m from nests. Swallows frequently exhibited circling behaviour (i.e. flying in wide circles high above the model) in response to Peregrine Falcons, regardless of presentation distance. They often showed diving displays (i.e. diving toward both Peregrine Falcon and Black Drongo mounts), particularly when the mounts were presented 5 m from the nest. Acoustic analyses revealed that Barn Swallow alarm calls consist of two components with at least nine distinct note types, whose combinations may encode further detailed information about the risks. These findings suggest that Barn Swallows use both visual and vocal signals to communicate information about predators.

A399 Talk

Long-term habitat dynamics of the endemic Blue-crowned Laughingthrush (Pterorhinus courtoisi): substantial conservation gaps and future-projected climate refugia

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Keywords: Blue-crowned Laughingthrush (*Pterorhinus courtoisi*), Suitable habitat, Centroid migration, Climate refugium, Conservation gap, Adaptive management

Conservation planning for range-shifting species requires understanding population movements and the capacity of protected areas to accommodate them. The Blue-crowned Laughingthrush (*Pterorhinus courtoisi*) is a Critically Endangered passerine endemic to China, breeding almost exclusively in villages of northeastern Jiangxi Province. We integrated 27 years of field monitoring (2000–2026) with 7,868 occurrence records, spatially thinned to 50 independent points, and applied a parameter-optimised MaxEnt model to project habitat suitability under current and future climate scenarios. We then overlaid predicted core habitats with nature reserves, ecological redlines, and permanent basic farmland to quantify protection gaps and land-use conflicts. The population centroid shifted 17.62 km southwestward along the Le'an River over the past 27 years. Future projections yielded consistent initial southwestward shifts across scenarios through the 2050s, but trajectories diverged thereafter depending on emission pathways. Despite differences in long-term trajectories, the southwestern Le'an River valley persists as the key climate refugium for this species. Under SSP3-7.0, suitable habitat is projected to contract by nearly 50% by the 2090s. Nature reserves cover 1.06% of core habitat; incorporating ecological redlines raises coverage to 11.60%, leaving 88.4% unprotected, while 16.76% overlaps with permanent basic farmland. We argue that static, boundary-based reserve designs are ill-suited to climate-driven range shifts, and recommend reconfiguring protected areas around the southwestern river valley refugium, supported by dynamic monitoring and adaptive management.

A400 Talk

Strengthening flyway conservation through collaborative networks and citizen science in the Central Asian Flyway

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Keywords: Central Asian Flyway, Central Asian Conservation Network, Citizen science, Flyway, Collaborative networks, Digital platforms

The Central Asian Flyway (CAF) supports over 600 migratory bird species across 30 range states, yet conservation remains constrained by geopolitical boundaries, language barriers, fragmented monitoring, and limited mechanisms for data sharing and collaboration. To address these challenges, the Central Asian Conservation Network (CACN) was established in 2024 to strengthen regional cooperation among researchers, non-governmental organisations, and conservation practitioners through thematic working groups on key sites, migratory species, bird ringing, renewable energy, cranes, vultures, shorebirds, geese, landbirds, and youth engagement. Building on this framework, CACN developed the CAF Digital Hub (www.cafnetwork.org), a bilingual, open-access platform integrating conservation resources, projects, and collaborative tools. The Hub includes flyway-wide initiatives such as the CAF Key Site Network, Bird Collision Reporting Portal, and Ringing and Resighting Data Portal, promoting standardized data collection, open sharing, and citizen science. CACN also coordinates Flyway Connect, engaging birdwatchers in reporting satellite-tagged migratory birds to improve knowledge of migratory connectivity and critical sites. In parallel, it is conducting one of the first multilingual assessments of illegal online trade in migratory cranes and waterbirds across nine countries. Together, these initiatives demonstrate how regional partnerships, digital infrastructure, and citizen science can strengthen evidence-based, transboundary conservation across the Central Asian Flyway.

A401 Talk

Projected global sea-level rise impacts on bird habitats

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Keywords: Sea-level rise, Habitat loss, Coastal inundation, Species vulnerability, Climate change, Human adaptation

Our understanding of the global impacts of sea-level rise (SLR) on avian biodiversity remains limited. By developing high-resolution future inundation maps (2020–2100) combined with species flooding vulnerability assessment and habitat range projections, we model global SLR impacts on 11,193 bird species across shared socio-economic pathways scenarios (SSPs). By 2100, SLR is projected to inundate 1.1–1.3% of global land in the absence of coastal defences, yet affect 34% of bird species. On average, birds are projected to lose around 11% of their habitat under SSP5, with substantial variation across regions and species. A total of 238 species are expected to lose over 50% of their habitat, including five facing complete inundation, particularly in biodiversity hotspots such as the Caribbean, Southeast Asia, and coastal Africa. Maintaining present-day protection levels, human adaptation could mitigate 33–37% of global land inundation and reduce habitat loss by 20–25% for severely exposed birds. Despite these benefits, protection remains insufficient for species concentrated in Caribbean and Southeast Asia-Oceania. Our findings highlight SLR as an uneven but significant driver of avian habitat loss, underscoring the importance of early and targeted adaptation and conservation to prevent irreversible biodiversity loss.

A402 Poster

International cooperation for Black-necked Crane conservation: progress, challenges, and strategic priorities

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Keywords: Black-necked Crane, International cooperation, Satellite tracking, Habitat restoration, Population monitoring, Transboundary conservation

The Black-necked Crane *Grus nigricollis*, the only crane species inhabiting high-altitude plateaus, has experienced remarkable population recovery over the past three decades—from approximately 5,600–6,000 individuals in 1996 to 15,944 in 2024—largely driven by international collaboration. Satellite tracking technology has elucidated migratory connectivity, revealing multiple corridors and stopover sites, while the Black-necked Crane Conservation Network (established in 2012) has coordinated transboundary surveys, annual meetings, and joint research with partners in Bhutan, India, and Nepal. Despite these achievements, persistent threats include urbanization, climate-induced habitat uncertainty, energy infrastructure (power lines and wind farms), and incomplete protection networks. The 2025–2030 action plan prioritizes: strengthening network linkages, monitoring climate impacts at key sites, building a satellite-tracking-based monitoring platform, conducting habitat assessment and restoration, promoting community-based conservation, and mitigating energy facility impacts. In Yunnan Province, which hosts 4,241 wintering cranes, targeted habitat restoration and power-line mitigation trials are underway. These integrated strategies provide a replicable model for migratory species conservation under global environmental change

A403 Talk

Evaluating temporal price drivers in Indonesia's live bird trade using citizen science and market data

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Keywords: Overexploitation, Caged bird trades, Songbirds, Owls, Online marketplace, Longitudinal monitoring

Indonesia's rich avifaunal diversity continues to be threatened by harvesting and trade for bird-keeping, which is increasingly difficult to monitor as the trade expands online. Whether market prices track ecological changes such as habitat loss, species rarity, and societal disruptions has not been empirically tested for Indonesia's bird trade. Here, we combined a novel longitudinal dataset of online trade data with existing market surveys to examine whether prices of owls and songbirds respond to ecological pressures and reflect long-term supply realities in Indonesia from 2015 to 2024. Using generalised linear mixed-effects models, we assessed how ecological pressures and COVID-19 stringency influenced prices across traded owls and songbirds, with additional biological traits incorporated for each order

in separate models. Across all species, only COVID-19 stringency and taxonomic order significantly influenced price, with prices rising under stricter pandemic measures. Prices were higher for species with desirable traits such as ecological specialisation, wing length, and endemism for owls, and evolutionary distinctiveness for songbirds. Rather than a market indifferent to rarity, this points to value accruing to distinctive species, a demand condition under which an anthropogenic Allee effect may arise. These findings raise concerns about the long-term sustainability of Indonesia's bird trade.

A404 Poster

Genomic signatures of endangerment: effective population size and heterozygosity in Galliformes

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Keywords: Galliformes, Effective population size (N_e), Demographic history, Runs of Homozygosity (ROH), Genomic inbreeding, Conservation genomics

Galliformes are ecologically, culturally, and economically important birds, yet over a quarter of species are threatened, and historic demographic and genomic data remain scarce. Effective population size (N_e) is used as a genomic predictor of conservation status in mammals, with smaller historical N_e linked to elevated extinction risk. Here, we leveraged publicly available whole-genome sequencing data to uncover genomic signatures of endangerment within this order. Temporal changes in N_e were reconstructed for 17 species using Pairwise Sequentially Markovian Coalescent (PSMC), while genomic inbreeding was assessed for 16 species via runs of homozygosity (ROH) using ROHan across multiple window sizes and rohmu values. Comparing N_e between the Last Interglacial (LIG) and Last Glacial Maximum (LGM) revealed differing trajectories, with 10 species declining and 7 increasing. Despite this fluctuation, all species entered the Holocene with markedly reduced N_e, indicating a shared demographic bottleneck across Galliformes regardless of LIG-LGM trajectory or current IUCN status. ROH burden varied widely (0–59% of the genome) and was highly sensitive to rohmu values. Integrating these findings with our ROH-based inbreeding estimates will allow us to probe how historical N_e and genomic inbreeding relate, and how this relationship can inform threat assessment and conservation.

A405 Talk

Habitat requirements and occupancy pattern of the endangered Serendib Scops Owl *Otus thilohoffmanni* in Sri Lanka

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Keywords: Occupancy modelling, Sri Lanka, Serendib Scops Owl, Range-restricted, Detection probability, Understory density

The Serendib Scops Owl is a recently described, highly range-restricted endemic owl of Sri Lanka, with critically limited information available. We assessed habitat requirements and occupancy of the species using single-season occupancy modelling at Kelani-Valley Forest Reserve, Sri Lanka. Nocturnal surveys were conducted across 77 sampling grids (300 x 300 m) representing 76% of 1155 hectares of potential habitat. Each grid was surveyed on three separate occasions through an area search method. The species was detected at six grids (~8%), with 10 total detections. According to the information theoretic approach, the best model showed a positive relationship with temperature and at the mean survey temperature (26.3°C) it was estimated at 0.41 (95% CI = 0.17–0.71). The predicted occupancy was highest in habitats with high bamboo presence and dense understory vegetation (ψ = 0.81; 95% CI = 0.13–0.99). High uncertainty in parameter estimates reflects the difficulty of modelling occupancy for a rare species with few detections, however, these data are the first to explore the critically under-studied habitat use of this rare endemic species. The results suggest that dense understory and abundant bamboo may be important for the persistence of the Serendib Scops Owl, providing a critical ecological baseline.

A406 Poster

Singing solos or coordinating a duet together: whether cooperation in singing influences the evolution of birdsong

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Keywords: Birdsong, Duetting, Vocal communication, Song evolution, Female song, Comparative phylogenetics

Songbirds communicate using learned songs, and both males and females can exhibit diverse singing behaviors. Here, we focus on two vocal interaction contexts: solos and duets. In duets, mated birds coordinate their vocalizations while simultaneously producing and

receiving signals. Thus, avoiding masking one another's signals while maintaining effective bi-directional information transmission may impose additional evolutionary pressures on song structure. However, whether vocal interactions such as duetting influence song evolution remains unclear. Here, we hypothesize that duetting alters evolutionary pressures on temporal and frequency-related song features. We compiled species-level data on female singing and duetting, and we classified species into four singing behavior categories: no female song, female solo song, female call duet (male song–female call), and song duet (male song–female song). Evolutionary transition analyses showed that song duets were more likely to evolve from female solos, whereas female call duets were more likely to evolve from song duets, potentially following the evolutionary loss of female song. We then analyzed male solo song recordings from online bioacoustic databases using phylogenetically controlled comparative analyses. Duetting species showed higher evolutionary rates toward lower male peak frequencies and narrower bandwidths. Together, these results suggest that vocal coordination during duetting may shape song evolution.

A407 Poster

Inbreeding and extinction risk in an endemic island bird: conservation implications for the Narcondam Hornbill

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Keywords: *Rhyticeros narcondami*, Island endemism, Conservation genetics, Inbreeding, Extinction risk, Hornbill conservation

Island-endemic birds are highly vulnerable to extinction because small, isolated populations are susceptible to genetic erosion, reduced adaptive potential, and environmental disturbances. The Narcondam Hornbill *Rhyticeros narcondami*, confined to the 6.8 km^2 volcanic Narcondam Island in the Andaman Sea, is one of the world's most geographically restricted hornbill species and an important model for island conservation. This study evaluates the potential influence of inbreeding on the species' long-term persistence by synthesizing available population and genetic evidence. The hornbill's restricted distribution, small effective population size, and prolonged geographic isolation are consistent with conditions that promote reduced genetic diversity and increased inbreeding, factors widely associated with elevated extinction risk in island vertebrates. Although the population currently appears demographically stable, limited gene flow may reduce its resilience to disease, environmental change, and stochastic events. These findings highlight that demographic stability alone does not ensure long-term population viability. Integrating conservation genetics into monitoring programmes, including periodic assessments of genetic diversity and effective population size, will improve early detection of genetic erosion and strengthen conservation planning. Maintaining genetic resilience should be considered a key priority alongside habitat protection for the long-term survival of this endemic hornbill.

A408 Talk

Bird habitat loss from oil palm expansion: global patterns and Indonesian supply chains

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Keywords: Biodiversity footprint, Oil palm, Habitat loss, Extinction risk, Forest-dependent species, Supply chain sustainability

Oil palm is a major driver of tropical deforestation, yet spatial evidence linking species-specific habitat loss to supply chains remains limited. We quantified bird habitat loss associated with oil palm expansion using a 10 m plantation map and refined potential and historical areas of habitat (AOH). Globally, 3.7% of non-plantation-suitable bird species and 5.1% of forest-dependent species lost more than 1% of their potential habitat to oil palm. Indonesia's plantations overlapped with the greatest number of affected bird species, followed by Malaysia and Costa Rica, while São Tomé and Príncipe had the highest biodiversity footprint per hectare. Using historical AOH, smallholder plantations showed 34.7% lower footprint intensity than industrial plantations, whereas no significant difference was detected using potential AOH, suggesting that industrial concessions more often targeted remaining natural habitats. 19 threatened species lost more than 10% of their potential habitat to oil palm, yet oil palm was not listed in their IUCN threat descriptions. In Indonesia, domestic-consumption-driven increases in extinction probability were a median 2.8-fold higher than export-driven increases across species. Overall, oil palm expansion poses spatially uneven risks to birds pantropically. Reducing biodiversity impacts will require upstream spatial shifts in sourcing patterns.

A409 Talk

From the international Yellow-breasted Bunting conservation action plan to a conservation strategy of migratory landbirds in Asia

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Keywords: Landbird, Conservation, Strategy

In 2001, the Threatened Birds of Asia: BirdLife International Red Data Book listed 323 species of birds as globally threatened, amongst them only about 20 species, from the Great Bustard *Otis tarda* to the Streaked Reed Warbler *Acrocephalus sorghophilus*, were migratory landbirds. This shows in the late 20th century, conservation concern mainly focused on waterbird species, whose status had been better studied. In 2015, researches showed that the Yellow-breasted Bunting *Emberiza aureola* had suffered a very drastic global decline in the past 30 years and studies from Korea and Japan also revealed decline of other species of migratory landbirds. In 2016, compilation of an International Action Plan on the Yellow-

breasted Bunting started. Subsequent actions resulted in a much better understanding and protection of this species. Projects of the Yellow-breasted Bunting initiated a wider interest in studies and conservation of more migratory landbird species. It was proposed at the East Asian–Australasian Flyway Partnership in 2025 to study the situation of migratory landbirds and propose options of establishing platform of conservation. In this short presentation, we use examples of conservation work on the Yellow-breasted Bunting and propose discussion on drafting a conservation strategy for migratory landbirds in Asia.

A410 Talk

Extreme drought-driven phenological mismatches amplify reliance on farmland in overwintering waterfowl

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Keywords: Migratory waterfowl, Climate change, Phenological shifts, Habitat switching, Natural foraging area, Anthropogenic habitat

Extreme droughts are becoming more frequent due to climate change and pose an increasing threat to wetland ecosystems. Drought can strongly reduce habitat suitability and change the timing of food availability for migratory waterfowl, resulting in a phenological mismatch with their high-quality food sources. However, little is known about how extreme drought drives the phenological mismatch and subsequently alters the pattern of foraging area use. Using GPS tracking data from Tundra Bean Goose *Anser serrirostris*, we investigate how extreme drought alters the spatiotemporal availability of high-quality natural foraging habitats and drive shifts between natural and human-modified foraging habitats at Poyang Lake, China, a key wintering area along the East Asian–Australasian Flyway. We found that extreme drought substantially advanced natural meadow green-up, resulting in a pronounced phenological mismatch between overwintering waterfowl and their natural food resources. Consequently, birds prolonged their use of human-modified habitats, particularly rice paddies near their roosting area. However, increased reliance on farmland is likely to increase energy expenditure and may have negative consequences for individual fitness. It also elevates environmental risks in agri-food systems, including disease transmission and crop damage. Our findings highlight the need for targeted management strategies to mitigate human-bird conflict under increasing environmental variability.

A411 Talk

Modeling seasonal distributions of Narcissus Flycatcher *Ficedula narcissina*: temporal resolution and information sharing across temporal periods

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Keywords: Environmental preference, Phenological stages, Dynamic species distribution models, Migration ecology, Citizen science data, Habitat suitability models

Migratory birds encounter different environmental conditions during breeding and migration, creating a need for distribution models that represent seasonal habitat associations. However, splitting observations into finer temporal periods reduces the data available for each model, potentially making seasonal estimates unstable. In this study, we investigate how temporal resolution and information sharing affect species distribution modelling for Narcissus Flycatcher *Ficedula narcissina*. We use data from eBird occurrence records and remotely sensed environmental covariates. Using MaxEnt and neural networks, we will compare a single model fitted across periods, independent period-specific models, and models that partially share environmental relationships across periods. We then examine whether information sharing improves predictive performance of habitat suitability models, evaluating predictions using held-out observations. We aim to establish when a seasonal separation and when sharing observations can improve predictions of habitat suitability during breeding and migration.

A412 Talk

Tracking Montagu's and Pallid Harriers in the Central Asian Flyway

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Keywords: Migration, Raptor, Grasslands, Open natural ecosystems, Detour

Amongst the world's bird migration flyways, the Central Asian Flyway (CAF) remains one of the most understudied migration systems. Used by around 400 species of birds, detailed tracking information is available for relatively few species in the CAF. This has hindered conservation efforts for birds that use the CAF as there is limited information on migratory routes, stopover, and staging sites. Species such as the Montagu's and Pallid Harriers, which have shown population declines of more than 50% over the last three decades, are among those with limited information on migration ecology. This study describes the migration of Montagu's Harriers (n=13) and Pallid Harriers (n=8) in the CAF using PTT and GPS tags. Both species migrated via a narrow corridor along the western circum-Himalayan flyway, thus avoiding the high altitudes of the Himalayas. Montagu's Harriers made long stopovers in the

Thar Desert, especially during autumn migration, while Pallid Harriers showed inter-individual variation in stopover site selection. The breeding areas of Montagu's Harriers were located in east and central Kazakhstan. However, Pallid Harriers showed extensive nomadic movements in their Central Asian breeding regions. Long-term conservation of both species requires protection of open natural ecosystems across the CAF.

A413 Poster

The migration passage pattern of ~100,000 annual raptors over Laotieshan, a key bottleneck in NE China along the East Asian–Australasian Flyway

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Keywords: East Asian–Australasian Flyway (EAAF), Raptor migration, Bottleneck, Laotieshan, GPS telemetry, Climate change

Despite growing raptor migration studies in Asia, a huge knowledge gap remains regarding raptor migration patterns over the East Asian–Australasian Flyway (EAAF). In Northeast China, the marine barrier around Bohai Bay makes Liaodong Peninsula a critical bottleneck area for autumn migratory raptors. To verify this area's significance along EAAF and investigate meteorological impacts on spatio-temporal migration patterns, we have been conducting monitoring at Laotieshan, the peninsula's southern tip. Our multi-year monitoring data suggests ~100,000 raptor migrants pass Laotieshan each autumn on average, with three dominant species—Oriental Honey-buzzard *Pernis ptilorhynchus*, Eastern Buzzard *Buteo japonicus*, and Chinese Sparrowhawk *Tachyspiza soloensis*—accounting for ~70–85% of total counts. In particular, several dominant species, e.g. the Chinese Sparrowhawk, tend to form large migratory flocks here. Additionally, individual tracking data revealed that species breeding in Far East Russia and Northeast China pass Laotieshan, suggesting its significant role for autumn raptor migration along EAAF. Furthermore, our observed correlation between migration fluxes and cold air outbreaks may help clarify how shifting cold air intrusions influence recent peak date instabilities. This knowledge provides valuable insights into whether climate change poses potential threats through disrupted migration timing, enabling a better framework for flyway-wide conservation.

A417 Poster

Breeding ecology of the Glossy Ibis *Plegadis falcinellus* in Nalati Wetland, Xinjiang, based on unmanned aerial vehicle monitoring

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Keywords: Breeding monitoring, Spatial distribution of nests, Nest-site selection, Multispecies breeding colony, Glossy Ibis, Unmanned aerial vehicle

New breeding records of the Glossy Ibis *Plegadis falcinellus* have increased in Central and East Asia in recent years. To examine the breeding ecology of a range-edge population, we studied Glossy Ibises in Nalati Wetland, Xinjiang, from 2024 to 2026 using visible-light imagery acquired by unmanned aerial vehicles. We mapped nest distribution and species composition within a multispecies colony and continuously monitored breeding performance. We recorded 210, 434, and 220 nests in 2024, 2025, and 2026, respectively. In 2025, 394 nests were monitored; mean clutch size was 3.19 ± 1.01 eggs (n=363), mean brood size at hatching was 3.12 ± 0.96 chicks (n=355), hatching success was 95.43%, and nesting success was 92.84% (n=377). Compared with other populations, clutch size was similar, whereas brood size and breeding success were relatively high. Spatial point-pattern analyses revealed significant intraspecific nest aggregation at scales of 0.5–20 m. This pattern remained significant after controlling for reed density, reed height, reed condition, and human disturbance, suggesting that environmental heterogeneity alone could not explain nest distribution and that social information and colonial breeding may contribute. UAV monitoring therefore provides an effective, low-disturbance method for studying breeding ecology in reed-marsh birds.

A418 Talk

Breeding-site selection in the reintroduced Oriental Stork population is more strongly influenced by natal philopatry than by Natal Habitat Preference Induction

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Keywords: Breeding habitat selection, Natal dispersal, Natal philopatry, Natal Habitat Preference Induction, Conservation, *Ciconia boyciana*

Since natal dispersal is associated with various ecological processes, identifying the factors that determine breeding-site selection is crucial for understanding population distribution and dynamics, and conservation management. This study investigated the relationship between natal philopatry and natal habitat preference induction (NHPI) in the reintroduced

Oriental Stork *Ciconia boyciana* population in Japan. Specifically, we examined two alternative hypotheses proposed in previous studies: 1) breeding-site selection is influenced more strongly by NHPI than by natal philopatry, or 2) breeding-site selection is influenced more strongly by natal philopatry than by NHPI. To evaluate the relationship between these behavioral processes, we compared variation in dispersal distance and landscape similarity between birth and breeding sites using Jensen–Shannon divergence. Among individuals, standardized variation was relatively greater for landscape similarity than for dispersal distance. Our results suggest that breeding-site selection in this population is more strongly influenced by natal philopatry than by NHPI, supporting the latter hypothesis. From a conservation perspective, release from multiple sites may be an effective strategy for metapopulation establishment in species with ecological characteristics similar to those of the Oriental Stork and exhibiting strong natal philopatry.

A421 Talk

A collaborative, transboundary evaluation of BirdNET for migratory bird monitoring across the East Asian–Australasian Flyway

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Keywords: Passive acoustic monitoring, BirdNET, Migratory birds, Bioacoustics, East Asian–Australasian Flyway

Passive acoustic monitoring combined with automated species recognition enables migratory bird monitoring across broad geographic scales, yet detector performance remains poorly evaluated for many species. The Locally-led East Asian Flyway Acoustics (LEAFA) network was established to build a collaborative framework for acoustic monitoring

across the East Asian–Australasian Flyway (EAAF) and evaluate BirdNET's reliability for migratory bird detection. Autonomous recording units were deployed across 14 sites in Indonesia, Malaysia, the Philippines, and Taiwan. Recordings were processed using BirdNET Analyzer, and partners independently reviewed detections before submitting validated datasets for centralized analysis. Species-specific logistic regression models examined the relationship between BirdNET confidence scores and validation outcomes across 72,704 recording hours and 14,765 detections spanning 15 migratory species. Validation probability increased significantly with confidence score for most species, though this varied by species and site: some showed consistently high validation rates across a broad score range, while others showed greater uncertainty and higher false-positive rates. These findings show BirdNET performance is site- and species-specific, and confidence scores should be interpreted accordingly rather than through a universal threshold. This study demonstrates how collaborative, cross-border analyses support standardized validation, strengthen confidence in automated recognition, and enable scalable monitoring for migratory bird conservation across the EAAF.

A423 Talk

An ancient HMGA2-linked haplotype region contributes to phenotypic divergence during speciation with gene flow in penduline tits

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Keywords: Hybrid-zone, Speciation, HMGA2, Gene flow, Bill morphology, Body size

How phenotypic differences persist despite ongoing gene flow remains a central question in speciation. Eurasian Penduline Tit (*Remiz pendulinus*; EPT) and Black-headed Penduline Tit (*R. macronyx*; BHPT) recently diverged and hybridize across Central Asia, yet differ in body size and bill morphology. We combined whole-genome resequencing of 101 individuals from allopatric populations and hybrid zones with morphometric data. Genome-wide PCA separated EPT and BHPT, while demographic modelling supported ongoing gene flow; hybrid-zone individuals spanned a continuous gradient of genome-wide ancestry. Against this admixed background, genome scans and local ancestry–phenotype analyses identified a 0.70-Mb region on chromosome 1A containing HMGA2 and six other genes. The region showed extensive linkage disequilibrium without evidence of a large inversion and contained two strongly linked haplotypes, termed the BHPT-like and EPT-like haplotypes. After controlling for genome-wide ancestry, dosage of the BHPT-like haplotype predicted both traits. The haplotypes diverged about 0.6 million years ago, long before the species split. The BHPT-like haplotype was nearly fixed in BHPT but persisted at low frequency in allopatric EPT populations, consistent with differential sorting of an ancient trans-species polymorphism.

These findings show that ancient haplotypic variation can persist through speciation and contribute to morphological divergence despite ongoing gene flow.

A424 Talk

Community-based nest monitoring reveals breeding success of the Endangered Javan Blue Flycatcher *Cyornis banyumas*

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Keywords: *Cyornis banyumas*, Breeding success, Artificial nest, Community-based conservation

The Critically Endangered Javan Blue Flycatcher *Cyornis banyumas* has undergone severe population declines driven primarily by trapping for the cage-bird trade, yet quantitative information on its breeding ecology remains lacking despite its high conservation priority. Since 2019, BISA Indonesia has collaborated with local communities in Jatimulyo Bird-friendly Village, Yogyakarta, to protect breeding pairs through nest monitoring as a community-based conservation intervention. In breeding seasons, natural and artificial nests were monitored using direct observations and closed-circuit video cameras. A total of 45 breeding attempts were monitored, of which 55.56% successfully fledged at least one young. Fledging success differed among nest types, with success rates of 56%, 4%, 24%, and 16% for natural bamboo, sugar palm tree, natural rock, and earth cliff. The principal causes of breeding failure were predation by civets (15%), snakes (5%), brood parasitism by *Cacomantis* cuckoos (20%), insect infestation (20%), adverse weather (5%), and unknown (35%). This study provides one of the first quantitative assessments of breeding success in the Javan Blue Flycatcher and demonstrates how community-based conservation can generate evidence to guide the recovery of threatened tropical forest birds.

A426 Talk

Cooperative breeding in an insular population of the Japanese Scops Owl: insights from genome-wide SNP-based kinship analysis

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Keywords: Cooperative breeding, Genome-wide SNPs, Parentage analysis, Kin selection, Island evolution, Japanese Scops Owl

Cooperative breeding, in which more than two individuals contribute to raising a single brood, has evolved repeatedly in birds but remains exceptionally rare in owls, whose breeding systems are typically socially monogamous. Proposed explanations include kin selection, ecological constraints, and direct fitness benefits. We investigated the breeding system of the Okinawa subspecies of the Japanese Scops Owl *Otus semitorques pryeri*, in which two or more males were repeatedly observed provisioning nestlings with a single female. To examine the evolutionary basis of this behaviour, we generated genome-wide single nucleotide polymorphism (SNP) data using MIG-seq and conducted kinship and parentage analyses of breeding adults and nestlings. Contrary to the kin selection hypothesis, cooperating males were often unrelated or only distantly related. Instead, parentage analyses revealed that multiple males sometimes sired offspring within the same brood, indicating a breeding system that is both socially cooperative and genetically polygamous. We further compared these results with SNP-based analyses from the largely monogamous mainland population of *O. semitorques* in Honshu, revealing clear differences in social and genetic mating systems between island and mainland populations. Our findings suggest that direct reproductive benefits, rather than kin-selected helping, may underlie the evolution of cooperative breeding in this insular owl population.

A427 Talk

Conservation breeding successes and challenges in Asian songbirds: case studies of the Javan Green Magpie and Rufous-fronted Laughingthrush

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Keywords: Songbird conservation, Conservation breeding, *Ex situ* management, *In situ* recovery, Indonesia, Java

Conservation breeding safeguards some of Asia's most threatened songbirds, though outcomes vary widely between species. The Javan Green Magpie *Cissa thalassina* exemplifies the potential of conservation breeding. Over 15 years, sustained management and support have produced species-specific protocols and fostered international, cross-institutional collaboration, with the *ex situ* metapopulation increasing rapidly. These results demonstrate that consistent investment and collaboration can stabilize a species on the brink of extinction. In 2025, a multi-stakeholder species conservation action plan integrated these efforts into a broader recovery framework, addressing challenges in expanding the *ex situ* network and translating *ex situ* success into effective *in situ* recovery. By contrast, the Rufous-fronted Laughingthrush *Garrulax rufifrons* illustrates the consequences of limited conservation investment despite similar threats. Conservation breeding efforts for this species remain constrained by technical challenges and limited investment, while trapping continues largely unabated. This cautionary tale highlights the risk of uneven prioritization,

where species without strong institutional or public interest may edge closer to extinction. Together, these case studies highlight the need for cohesive, multi-stakeholder action plans that integrate *ex situ* and *in situ* strategies. Regional and international frameworks ensure successes are not isolated, neglected species are not overlooked, and conservation breeding contributes to long-term recovery.

A429 Talk

Genome assemblies reveal long-term chromosomal stability in Wallacean and Australasian cockatoos

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Keywords: Cockatoo, Chromosomes, Assemblies, Speciation, Genomics, Hybridization

Despite their remarkable ecological and morphological diversity, chromosome evolution across parrots remains poorly understood. Recent chromosome-level genome assemblies have shown that Neotropical parrots, particularly macaws (*Ara*), exhibit varying degrees of chromosomal rearrangement, with most structural variation concentrated within the microchromosomes. However, researchers have not examined chromosome evolution across the Wallacean and Australasian cockatoos (Cacatuidae), an iconic avian radiation centered in the Asia-Pacific region. Here, we generated chromosome-level genome assemblies for six cockatoo species to reconstruct chromosome evolution across the family. Comparative whole-genome alignments and synteny analyses, comparing the conserved order of genes and chromosomal regions among species, reveal striking conservation of chromosome structure despite approximately 30 million years of diversification. Both macro- and microchromosomes remain highly conserved, with only a few lineage-specific rearrangements identified. This stability may facilitate hybrid compatibility by reducing meiotic barriers, consistent with repeated reports of naturally occurring intergeneric hybridization in wild cockatoos but comparatively rare hybrids among macaw genera. These chromosome-scale assemblies provide the first comparative genomic framework for understanding chromosome evolution in this iconic Asia-Pacific lineage and establish a foundation for investigating how genome architecture has shaped hybridization, speciation, and reproductive isolation, with important implications for parrot conservation.

A431 Talk

Securing the conservation of the North-Central Selangor Coast through long-term waterbird monitoring

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Keywords: East Asian–Australasian Flyway, Migratory waterbird, Shorebirds, Conservation, High tide roost, Intertidal mudflat

The North-Central Selangor Coast is one of Malaysia's most Important Bird and Biodiversity Areas for wintering and/or staging migratory waterbirds especially shorebirds. The importance of this coast was first documented in the 1980s through a series of wetland and waterbird programmes implemented by INTERWADER/Asian Wetland Bureau. Since then, waterbird populations are monitored regularly through citizen science programmes. A rapid assessment in 2019 to identify existing and new high tide roosts along the coast and their viability after three decades. The study recorded 51 waterbird species including six globally threatened species. Three major high tide roosts that consistently supported more than 1% of the flyway population thresholds were identified. Migratory shorebirds consistently used both natural coastal mudflats and artificial habitats such as ash ponds. These findings reiterated the continued importance and conservation values of the North-Central Selangor Coast to migratory waterbirds over three decades of changes. However, there is a need to investigate local movement networks and patterns and population dynamics of waterbirds along the coast to improve targeted conservation actions. The accumulated data is now being used to advocate for the nomination of the North-Central Selangor coast as a Flyway Network Site for Malaysia under the East Asian–Australasian Flyway Partnership.

A432 Talk

From passive acoustic data to citywide monitoring design: AI-powered spatial prediction of urban bird acoustic activity

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Keywords: Asian Koel, AI-powered management, Human-bird conflict, Passive acoustic monitoring, Spatial prediction, Urban monitoring design

As Asian cities expand, predicting when and where bird vocal activity may contribute to human–bird conflict is critical for planning coexistence. Yet extrapolating from sparse acoustic monitoring networks to cities remains a persistent bottleneck. Using the Asian Koel *Eudynamys scolopaceus* in Shenzhen, China, as a case study, we present a scalable, data-

driven framework integrating passive acoustic monitoring, hierarchical modeling, spatial validation, and urban monitoring design. From March 2024 to August 2025, recorders monitored 31 sites. A hierarchical occupancy model separated weekly acoustic occurrence from imperfect daily detection while capturing landscape context, seasonality, and the acoustic occurrence of three potential host groups. Critically, we tested spatial transfer at withheld sites and delineated environmental boundaries of citywide predictions. Two findings advance the field. First, potential-host information improved prediction beyond landscape and seasonality alone, underscoring the power of interspecific signals to strengthen spatial transfer. Second, overlaying predictions with environmental applicability maps and urban planning layers generated actionable, spatially explicit guidance for aligning monitoring priorities with planning needs. Together, detection-corrected modeling and rigorous validation transformed sparse acoustic data into robust decision support—offering a transferable blueprint for adaptive city-scale passive acoustic network design, helping cities anticipate potential human–bird conflict and plan for coexistence.

A435 Talk

Spatial distribution, daily vocal activity, and vocal repertoire of the Critically Endangered Javan Green Magpie in Mount Sawal Wildlife Reserve

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Keywords: Javan Green Magpie, Vocalisation, Java, Bioacoustics, Distribution, Critically Endangered

The Javan Green Magpie *Cissa thalassina* is a Critically Endangered Javan endemic for which information on the distribution and vocal behaviour of wild populations remains scarce. To support conservation planning, surveys were conducted in Mount Sawal Wildlife Reserve, West Java, using direct observations and passive acoustic monitoring. This study investigated the species' spatial distribution, daily vocal activity, and vocal repertoire using qualitative and quantitative bioacoustic analyses. Passive acoustic monitoring surveys conducted in 2023 and 2025 yielded 19 Javan Green Magpie vocal recordings and one direct observation at five occurrence points across four 1-km² survey grids. Temporal analysis identified daily patterns of vocal activity, providing valuable baseline information to guide future monitoring. Qualitative assessment of vocal structure revealed recurring vocal motifs and structural variation, forming a foundation for categorisation and analysis of vocal function. Quantitative analyses of acoustic parameters, including vocal type duration and frequency characteristics, are ongoing. Preliminary findings demonstrate the value of passive acoustic monitoring for improving detection of this elusive species, while bioacoustic analyses provide valuable new insights into vocal behaviour. These findings provide important baseline ecological information to support long-term monitoring and conservation management of one of Asia's most threatened songbirds.

A438 Talk

Towards a localised bird ringing programme for Singapore: building capacity in a tropical urban context

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Keywords: Bird ringing, Singapore, Urban ecology, Monitoring, Training, Bird tracking

Bird ringing in Singapore dates back to 1964, before the first long-term ringing programme was established by the National Parks Board at Sungei Buloh Wetland Reserve in 1990. Today, bird ringing in Singapore comprises ongoing monitoring at fixed sites and targeted project-based efforts. However, ringing efforts remain constrained by limited resource guides for Southeast Asia and relatively low capture rates in Singapore, while the lack of pronounced seasonality in tropical environments hinders the interpretation of plumage and moult patterns. Drawing on historical ringing data in Singapore, we analyse trends in species composition, capture rates, and seasonal patterns, and examine how these patterns may diverge from assumptions embedded in established ringing schemes developed for temperate contexts. We argue that a localised approach is paramount for supporting long-term monitoring efforts, contributing to assessments on land-use change. In addition to traditional mark-recapture methods, Singapore's urbanised environment with high mobile device penetration creates opportunities to leverage low-cost and lightweight Bluetooth tracking technology to understand habitat connectivity. We outline Singapore's latest efforts to develop a structured ringing certification programme anchored by a training pathway tailored to Singapore's needs, which will help advance monitoring and research efforts in ecological connectivity, population genetics, biosurveillance, and species distributions.

A439 Talk

Eggs on envelopes: using postage stamps to teach diversity, evolution and conservation of bird eggs

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Keywords: Bird eggs, Ornithological education, Philately, Egg diversity, Postage stamps, Conservation education

The eggs of birds are among the most diverse structures in the natural world, ranging from the Bee Hummingbird *Mellisuga helenae* egg that weighs just 0.3 g to the more than 1,200 g egg of the Common Ostrich *Struthio camelus*. Their remarkable variation in size, shape, colour, and incubation period reflects long histories of evolutionary adaptations. Bird eggs therefore provide an engaging entry point to the discussions of ornithology, evolution and conservation. At the same time, ethical and legal constraints on collecting eggs rightly limit their collection. This paper highlights postage stamps as an overlooked, inexpensive and widely accessible resource for teaching these topics. Substantial body of material depicting birds and a smaller but varied one depicting eggs and nests have been issued by postal departments worldwide. We take a look at this material and show how it can be arranged into teaching sequences on egg diversity, pigmentation, shape and function and brood parasitism. Though ornithology and philately may seem disconnected activities, they can come together to bring a new dimension to the study of nature and environment. This paper hopes to inspire action by celebrating the diversity and significance of study of birds eggs with the art of philately.

A440 Talk

Why sex-based genomic differentiation should not be overlooked in population genomics

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Keywords: SNP-based analysis, W chromosome, Z chromosome, Evolutionary genomics, Population genetics, Sex-biased selection

The Eurasian Great Tit species complex (*Parus major sensu lato*) is an ideal model for studying adaptation across diverse environments, owing to extensive genomic resources spanning Europe and Asia. However, an important source of genomic variation remains largely overlooked: differentiation between the sexes. Here, we investigate sex-specific genomic differentiation using population-scale genomic datasets from the great tit complex. We identify a striking autosomal differentiation hotspot on chromosome 5 that is strongly associated with sex and is likely caused by sequence similarity between autosomal and sex-linked (Z and potentially W) genomic regions. Comparison with high-quality songbird genomes suggests that rapidly evolving sex chromosomes can generate apparent autosomal differentiation through mapping artefacts or transposed homologous sequences. We further demonstrate that differences in the sex ratio among sampled populations can substantially inflate measures of population differentiation, including F_{ST}, creating false signals that may be misinterpreted as evidence of local adaptation. Because sex-biased sampling and incomplete representation of the W chromosome remain common in avian genomics, we advocate routine implementation of sex-aware population genomic analyses, including balanced sampling, explicit modelling of sex, validation of candidate loci, and, where possible, the use of reference genomes assembled from the heterogametic sex.

A441 Poster

Potential avoidance of fecal–oral transmission through land-based defecation in wading birds

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Keywords: Wading birds, Black-faced Spoonbills, Excrement, Defecation behavior, Defecate on land, Fecal-oral transmission

Black-faced Spoonbills have recently been found moving to land to defecate after foraging on water at Kasai Marine Park in Tokyo, Japan. Similar behavior had been reported in herons and sandpipers, but its functional significance remains unclear. Furthermore, although pathogen transmission via excrement drives poultry mortality and wading birds population decline, research on wading birds defecation behavior is scarce. This study aimed to clarify environmental factors and interspecies differences in defecation site selection by comparing the defecation behavior of Black-faced Spoonbills in the wild and in captivity, as well as with Little Egrets and Great Egrets. The results showed that Black-faced Spoonbills tended to defecate on land in both the wild and captivity, whereas Little Egrets and Great Egrets predominantly defecated on water. This contrasts with previous studies reporting a tendency for herons to defecate on land. Because Black-faced Spoonbills forage by swiping their bills through the water, frequently bringing their beaks into contact with the water surface, defecating on land may serve to avoid fecal–oral transmission. Understanding such excretory behavior is expected to provide new insights into avian disease transmission and animal behavior.

A442 Poster

Passive acoustic monitoring of the Java Sparrow *Lonchura oryzativa*: diel vocal activity and monitoring recommendations

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Keywords: Passive acoustics monitoring, Java Sparrow, Diel vocal activity, Pattern matching, Automated recording unit, Conservation monitoring

We used passive acoustic monitoring to quantify diel vocal activity and evaluate monitoring methods for the endangered Java Sparrow *Padda oryzivora* across artificial and natural habitats in Yogyakarta between July and November 2025. Automated recording units (Audimoth) collected 8,423.7 hours (504,420 one-minute files) at 10 sites, including the Prambanan Temple complex, PAU-UGM, and five karst caves. Pattern-matching (PM) analyses on the Arbimon platform, using three call templates and subsequent manual verification, detected Java Sparrow calls at 9 of 10 sites with variable detection frequencies

(highest at Luweng Ombo, FD = 0.031). PM template accuracies were modest (0.40–0.50) using the default threshold (0.3), indicating a need for threshold optimization, additional templates, and recalibration to assess false negatives. Diel patterns differed by habitat: Prambanan showed continuous presence with peaks in early morning and occasional night detections (suggesting roosting/foraging and use of temple crevices), PAU-UGM showed daytime resting and midday activity, and karst sites exhibited stronger daytime detections. Passive acoustics proved effective for presence and activity assessment but requires methodological refinement for reliable automated identification. We recommend optimizing PM parameters, expanding call libraries, and integrating environmental covariates to improve monitoring and inform site-specific conservation strategies.

A443 Talk

Squirrels co-occurrence within mixed-species bird flocks (MSFs) in lowland rainforests of Sri Lanka

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Keywords: Species co-occurrence, Edge effect, Habitat heterogeneity, Foraging associations, Facilitation

Mixed-species bird flocks (MSFs) are a ubiquitous feature of tropical rainforests. While avian participants have been extensively studied, the role of non-avian members, particularly squirrels, remains poorly understood. We investigated occurrence patterns of squirrels within MSFs across five lowland rainforest sites in Sri Lanka, examining associations with habitat disturbance, land use types, and compositions. Of 112 flocks observed, 99 contained at least one squirrel species. Using logistic regression models and co-occurrence analyses, we found divergent responses to distance from forest edges: detection probability of Leyard's Jungle Squirrel *Funambulus layardi* decreased significantly with increasing distance, while Palm Squirrel *Funambulus palmarum* presence increased significantly, habitat preferences differed markedly: Jungle Squirrels showed higher occurrence in forest and riparian areas, whereas Palm Squirrels frequented agroforests, marshlands, and mixed cultivation areas; both species were rarely detected in tea plantations. Diurnal activity patterns revealed Jungle Squirrels were most active during mornings, while Palm Squirrels showed peak occurrence during midday. Orange-billed Babbler presence was significantly associated with squirrel occurrence, suggesting interspecific dependencies. Our findings demonstrate that squirrel species occupy non-redundant ecological roles within MSFs, exhibiting habitat-specific responses to landscape fragmentation, and highlight the importance of habitat heterogeneity for maintaining diverse flock compositions in fragmented landscapes.

A445 Poster

Long-term monitoring of migratory landbirds in Mongolia: integrating bird ringing and biologging

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Keywords: Mongolia, Flyways, Biologging, Bird ringing, Long-term monitoring, Tracking technology

Mongolia lies at the heart of Asia and is a landlocked country situated between Russia and China. Its vast and diverse landscapes provide important breeding habitats for migratory birds using the Central Asian Flyway (CAF), East Asian–Australasian Flyway (EAAF), and the Eurasian–African Flyway. Historically, ornithological research in Mongolia was largely short-term and opportunistic, with limited systematic long-term monitoring. The Wildlife Science and Conservation Center (WSCC) pioneered a nationwide, long-term monitoring approach focused on migratory passerines and other landbirds, including swifts, bustards, nightjars, and raptors. Recognizing the challenges posed by limited human resources, WSCC established an international volunteer-based bird ringing program to operate constant-effort monitoring stations along both the CAF and EAAF. This program has been complemented by the application of state-of-art tracking technologies, including geolocators and GSM-GPS transmitters, enabling researchers to investigate migration routes, breeding ecology, and flyway connectivity in unprecedented detail. This collaborative approach has generated significant scientific knowledge on the migration ecology of Asian landbirds and has only been possible through the dedication of numerous international volunteers, researchers, and partner organizations.

A446 Talk

Lessons from a regional conservation network: addressing Asia's songbird trade crisis through collaboration

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Keywords: Songbird conservation, Wildlife trade, Collaboration, Southeast Asia, Species recovery, Stakeholders

The illegal and unsustainable trade in Asian songbirds remains a major threat to biodiversity, affecting hundreds of species across multiple countries. In response, the IUCN SSC Asian Songbird Trade Specialist Group was established in 2017 to bring together researchers, conservation practitioners, government representatives, zoological institutions and other experts to address this complex challenge through coordinated action. This presentation reflects on the lessons learned from the Specialist Group’s members' work and examines

how collaborative networks can contribute to tackling large-scale conservation problems. Drawing on examples from conservation and trade research, policy and enforcement, and community engagement, we highlight factors that have enabled progress despite limited resources and the transboundary nature of the songbird trade. Recent successes include strengthening the evidence base for conservation action, supporting improvements in international and domestic legal protection for priority species, and safeguarding unique taxa on the brink of extinction. We discuss challenges encountered, remaining knowledge gaps and priorities identified in the Specialist Group's future workplan. The experience of the group demonstrates that sustained partnerships, shared expertise and coordinated action are essential for addressing complex wildlife trade threats and achieving conservation impact at regional scales.

A448 Poster

Diel shifts in vigilance strategies among sympatrically foraging shorebirds

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Keywords: Predation risk, Vigilance, Diel cycle, Flock size, Shorebirds, Habitat safety

Predator avoidance is directly linked to fitness, and vigilance is a fundamental component of this strategy. However, vigilance incurs costs, such as reduced foraging efficiency. Birds may reduce these costs by foraging in safer patches (the predation risk allocation hypothesis) and by forming groups, which can lower individual vigilance through shared detection (the many-eyes hypothesis). However, previous studies have focused on daytime observations and have not captured the diel cycle. This study examined vigilance behaviour, including nocturnal periods, in multiple shorebird species that forage during both day and night. Data were collected using a camera (Nikon D3300) and a thermal scope (HIKMICRO FALCON FH35). We tested the predation risk allocation hypothesis, the many-eyes hypothesis, and the effects of patch safety on flock size, evaluating how each of these factors varies between day and night. We recorded the proportion of time spent vigilant during foraging, and analyzed how it was affected by flock size, diel period, nocturnal light levels, and tidal conditions for each species. Our results demonstrate how the effects of predation risk allocation and group formation vary across the diel cycle, and provide a more comprehensive understanding of vigilance behavior by integrating flock size, habitat safety, and diel variation.

A450 Talk

From capture to departure: automated radio telemetry at Korean stopover sites and prospects for flyway-scale monitoring

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Keywords: Automated radio telemetry, Stopover ecology, Departure decision, Nocturnal migration, *Emberiza*, East Asian Flyway

Bird banding records traits at capture, but low recapture rates during stopover leave post-release behavior largely unknown. Automated radio telemetry with micro tags can bridge this gap by monitoring birds until departure. We combined detections from directional receiver arrays with banding and weather data to measure nocturnal departure timing and initial direction. On Daecheong and Socheong Islands, South Korea, during 2021–2025, we tagged 150 Yellow-browed Buntings *Emberiza chrysophrys* in spring and autumn and 37 Rustic Buntings *E. rustica* in autumn. In spring, earlier departure in Yellow-browed Buntings was associated with adult status, higher fat scores, tailwinds, rising barometric pressure, and higher relative humidity. In autumn, it was associated with tailwinds in Yellow-browed Buntings and lower cloud cover in Rustic Buntings. Yellow-browed Buntings, passage migrants in Korea, headed north-northeast in spring and southwest toward open water in autumn, consistent with initiating a Yellow Sea crossing, whereas Rustic Buntings, which also winter in Korea, showed a weak southerly tendency. This study shows how automated radio telemetry extends banding stations to measure departure behavior. Compatible receiver networks using standardized protocols around the Yellow Sea and the wider flyway could detect tagged birds at successive stopover sites, supporting assessments of migratory routes and connectivity.

A451 Talk

Participatory land-use management planning as a tool for biodiversity conservation: an ongoing process in Mbeliling Landscape, Flores, Indonesia

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Keywords: Mbeliling landscape, Evidence-based, Sustainable land-use management, Participatory, Community ownership, Environmental services

Mbeliling Landscape in Flores which encompasses Mbeliling-Tanjung Kerita Mese Key Biodiversity Area covering approximately 94,000 ha, is an important habitat for some of the endemic and globally threatened species, including Flores Monarch, Flores Crow, and Flores Hawk-Eagle. However, increasing pressure from land use change and livelihood needs poses growing challenges to biodiversity conservation in this landscape. Addressing these

challenges requires planning approaches that promote evidence-based, community-led decision-making for sustainable land-use management. This oral presentation presents an ongoing participatory land-use management planning process facilitated by Burung Indonesia across villages in the Mbeliling Landscape. Using participatory mapping, landscape transects, and focus group discussions, communities assess land-use conditions, analyze environmental challenges, and develop shared priorities for sustainable land-use management. Burung Indonesia facilitates the process by introducing participatory analytical tools, providing ecological information, and supporting evidence-based dialogue without directing community decisions. Preliminary findings indicate this process has strengthened shared understanding of landscape conditions, allowed communities to make their own decisions, increased community ownership of conservation priorities, and fostered collective commitment to sustainable land-use management. Sustainable delivery of environmental services has started to be understood as the long-term vision of land-use management, including the provision of habitat for the globally threatened species.

A452 Talk

Seasonal shifts in the fitness consequences of human disturbance in a wild passerine

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Keywords: Breeding ecology, Human disturbance, Fitness, Daurian Redstart

Human disturbance is widespread in modern environments, yet its fitness consequences are often context dependent and may vary over time. Using eight years of monitoring in a wild population of Daurian Redstarts *Phoenicurus auroreus*, we examined how nesting distance from the nearest building was associated with reproductive success, offspring development, and reproductive traits across two breeding periods. We also manipulated perceived brood parasitism risk during the first laying period to induce changes in nest-site selection and nesting proximity to humans. Reproductive success was higher for nests closer to humans during the first breeding period but was unrelated to nesting proximity during the second. In contrast, nestling structural size, measured by tarsus length, increased with distance from humans during the second period, whereas body condition was unaffected. Laying date, clutch size, and brood size showed no association with nesting proximity in either period. The manipulation experiment produced reproductive patterns consistent with the long-term monitoring data. Our findings demonstrate that the fitness consequences of nesting near humans vary across the breeding season and among fitness components, highlighting the importance of considering temporal variation and multiple fitness measures when assessing animal responses to human disturbance.

A454 Talk

What drives mobbing behaviour in birds? A meta-analysis

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Keywords: Anti-predatory strategy, Functional traits, Interspecific interactions, Macroecology, Mobbing, Mixed-species animal groups

Mobbing is a widespread anti-predatory behaviour in birds, yet it remains unclear why some species participate more than others. Although previous studies have linked mobbing to ecological traits such as body mass, foraging strata and guild, and sociality, the prevalence of these associations across bird communities remains unclear. We therefore assessed the ecological traits associated with mobbing species relative to non-mobbing species across communities globally through a meta-analysis. We hypothesized that mobbing species are likely associated with traits that increase 1) vulnerability to predation (smaller body mass), 2) predator detection (higher foraging strata, sociality, and broader diet breadth), 3) reproductive investment (fast life-history strategy), and 4) maneuverability to evade attacks (lower hand-wing index and shorter relative tarsus length). We collated mobbing species from 31 datasets and identified non-mobbing species from eBird database for the same communities. Species traits were extracted from open-source trait databases. A global Bayesian phylogenetic generalized linear mixed model showed that species with smaller body mass, higher foraging strata, interspecific sociality, broader diet breadth, and reduced hand-wing index were more likely to mob. Mobbing may therefore be particularly important for species that face greater susceptibility to predation and have enhanced abilities to detect predators and evade attacks.

A455 Talk

Beyond the forest: island-wide monitoring and urban breeding reveal ecological flexibility in the Malayan Night-Heron

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Keywords: Malayan Night-Heron, Urban ecology, Ecological flexibility, Camera-trap monitoring, Breeding ecology

The Malayan Night-Heron *Gorsachius melanolophus* is a secretive forest-associated heron distributed across East and Southeast Asia, yet its ecology remains poorly understood across much of its range. In Taiwan, however, the species is frequently observed and increasingly recorded breeding in human-modified environments, providing an unusual opportunity to examine its ecological flexibility. We synthesized two complementary datasets spanning

different spatial scales. Island-wide camera-trap monitoring from 303 sites during 2015–2023 characterized its distribution, elevational occurrence, and seasonality, while intensive nest monitoring in the Chiayi region from 2021–2024 examined breeding ecology, nest-site selection, and reproductive success. Camera-trap records demonstrated broad occurrence across low-elevation mountain regions and provided evidence of activity throughout the year. At the local scale, Malayan Night-Heron consistently bred within heterogeneous built–green urban mosaics. Annual reproductive success ranged from 61.9% to 84.8%, and nest sites were associated with greater proportions of built area and higher green-patch edge density. Nest survival was influenced more strongly by breeding stage and rainfall than by urbanization itself. Together, these findings suggest that the Malayan Night-Heron is more ecologically flexible than its traditional association with forest habitats implies. Taiwan provides a valuable system for understanding how this poorly known Asian heron uses and successfully reproduces in increasingly human-modified landscapes.

A456 Talk

The Little Owl *Athene noctua*: how many species are hidden in one?

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Keywords: Little Owl, Phylogeny, Subspecies, Taxonomy, *Athene*

The Little Owl *Athene noctua* is a nocturnal raptor widely distributed from Africa to East Asia and is currently considered one species with 13 living and one fossil subspecies. However, this taxonomy is not completely clear; some subspecies were not recognized by previous studies or, on the contrary, were occasionally treated as separate species. We analyzed nine accepted subspecies based on several nuclear and mitochondrial markers; in addition, several complete mitogenomes of the Little Owl were added to the analysis (Starikov et al., unpublished). We obtained four major groups where the genetic distances between each other 2–3 times exceed the mean interspecific distances for birds. Most of the haplotypes are well geographically differentiated, and the four clades analyzed in this study may be recommended to be treated as a proper species, also considering morphological differences. The Middle Eastern form *lilith* differs not significantly from the neighboring subspecies and should not be considered a full species like previously suggested. The phylogeny of the genus *Athene* reveals the divergence of *A. noctua* started in Pliocene and reached its maximum in Pleistocene. Current Little Owl populations likely recently expanded, which can be related to the Pleistocene last glaciations involved in their evolution.

A457 Talk

Sexual selection shaped phenotypic evolution near the origin of birds

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Keywords: Fossil birds, Sexual dimorphism, Sexual selection, Paleontology

Sexual selection has strongly shaped phenotypic evolution in living birds, but its role during early avian evolution remains difficult to test because of limited fossil samples and challenges in identifying sex. Here, we investigate sexual dimorphism in two exceptionally well-sampled paravian taxa, *Confuciusornis sanctus* and *Anchiornis huxleyi*. Using the largest morphometric dataset assembled for the Early Cretaceous bird *Confuciusornis sanctus*, we show that its paired elongate rectrices are sexually dimorphic and identify significant sexual differences in body size and allometric patterns. Also, analysis of 185 exceptionally preserved specimens of the Late Jurassic feathered dinosaur *Anchiornis huxleyi* further reveals previously unrecognized sexual size dimorphism. The larger morphotype exhibits more elaborate feather ornamentation on the forelimbs, hindlimbs, and tail, interpreted as sexual dichromatism and the earliest known example in dinosaurs. Size dimorphism, a skewed sex ratio, and disproportionately elongated limbs in larger individuals collectively support strong sexual selection. These findings suggest that sexual selection influenced body size, plumage ornamentation, and limb proportions near the origin of birds, and may have contributed to forelimb elongation before its later specialization for flight.

A458 Talk

Tracking landbird migration in Asia through collaborative work at the Baikal Bird Ringing Station

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Keywords: Baikal Bird Ringing Station, Baikalsky Nature Biosphere Reserve, Baikal Rift Zone, Individual tracking, Recapture-based tracking projects, Landbird migration in Asia

Understanding avian migration is essential for explaining individual and population-level variation, identifying evolutionary patterns, and designing conservation strategies amid global declines in migratory species. Individual tracking provides detailed information on annual movements; additionally, deployments at known breeding sites can further link migratory traits to population genetic structure and reveal population-specific threats. For small landbirds carrying archival devices, however, data recovery requires recapturing individuals; breeding-site fidelity therefore makes established field stations especially valuable. In Asia, landbird migration remains poorly documented, especially for species breeding in remote and inaccessible regions of Siberia. From 2018 to 2023, the Baikal Bird Ringing Station (BBRS) of the Baikalsky Nature Biosphere Reserve supported international tracking projects involving researchers from four countries and 11 species, resulting in 41 individual tracking datasets. Recapture-based projects achieved an average data recovery rate of 25%. By serving as a logistical base camp, BBRS enabled projects across the Baikal Rift Zone, where several species exhibit contrasting intraspecific migration strategies in relation to the Qinghai–Tibet Plateau. The collaborative model from Baikal Bird Ringing Station illustrates how ringing stations can connect international expertise with local infrastructure. Similar partnerships could help close major knowledge gaps elsewhere in Asia, particularly along the Central Asian Flyway.

A459 Talk

Bird poaching threatens a montane refugium on Java, Indonesia

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Keywords: Poaching, Bird trade, Montane birds, Songbird crisis, Java, Mount Slamet

The demand for wild-caught birds continues to place pressure on Java's bird populations, including those in montane forests where many endemic species persist. We examined bird communities and human pressures on Mount Slamet, Central Java, during March–April 2025, using 235 point-count stations across an elevational range of 500–3,000 m. Human activities and their traces, including hunters, snares and bullet casings, were recorded along survey routes to identify where pressure was concentrated. We recorded 122 bird species from 41 families, including at least 14 Javan endemics. Of 93 human-activity records, poaching was the most frequent (38%), followed by agroforestry (23%), infrastructure (15%), hiking (14%), and illegal motorbike trails (7%). Human pressure was spatially clustered, reaching approximately 2.8 records/ha in accessible areas, particularly near trailheads. Montane forest specialists occurred more frequently in areas with greater canopy cover and farther from settlements. In contrast, several generalist and open-habitat species were associated with trails and higher

human activity. Mount Slamet still supports a diverse montane bird community, but the prevalence and spatial concentration of poaching show that forest protection alone may not safeguard its birds. Reducing poaching and controlling access to pressure hotspots should therefore be priorities for maintaining this important montane refuge.

A460 Talk

Migration routes of Common Cuckoos *Cuculus canorus* of Baikal Rift Zone

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Keywords: Common Cuckoo, Baikal Rift Zone, Migratory landbirds of Asia, ICARUS satellite transmitters, Migratory divide

The complex landscape of the mountain systems of Central Asia has long been regarded as a geographical barrier for migratory landbirds. Siberian migrants often detour around the Qinghai-Tibet Plateau (QTP); intra-specific variation of migration routes sometimes result in a migratory divide. Baikal Rift Zone located northeast of QTP, and has been hypothesized to be a migratory divide for many species. The East Asian Common Cuckoo is known to migrate either from north or south of the QTP with a potential migratory divide in Gansu, China. To document Common Cuckoo migration patterns, we deployed ICARUS satellite transmitters and collected data from three individuals from Tunka (west of Baikal) and Barguzin Valley (east of Baikal). The three individuals employed three migration patterns: the cuckoo from Tunka migrated northwest to Tian Shan Mountains during both autumn and spring migration, whereas one cuckoo from Barguzin migrated southeast of QTP in both seasons. The other cuckoo from Barguzin employed a loop pattern (NW to Tian Shan in autumn, and SE to QTP in spring). The documented migration diversity suggests that Baikal may represent an extension of the migratory divide identified in Gansu, with the Baikal Rift Zone potentially separating multiple Siberian migratory taxa by migration pattern.

A461 Talk

Generalised linear mixed models based on dense citizen science data reveal avifaunal trends in a tropical city

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Keywords: Generalised linear mixed model, Urban ecology, Citizen science, eBird, Population trends

Citizen science platforms like eBird offer dense observational data in urban areas. However, structural biases, like spatially clustered observations and variable observer skill levels, complicate their use for population trend analysis and broader biological inferences. We

developed a two-stage generalised linear mixed model framework to extract effort-corrected occurrence and abundance trends from 10 years of eBird data in Singapore (2016–2026: 2.06 million observations, 275 species). The two-stage framework separates detection probability (binomial arm) from conditional abundance (negative binomial arm), each with independent trend estimates. Cyclic splines capture seasonal and time-of-day variation, while spatial, observer, and event-level random effects absorb the non-independence inherent in citizen science data. Satellite-derived habitat covariates supplement the spatial effects. We conducted random-effects meta-analyses of per-species annual slopes, showing trends consistent with independently documented patterns: declines in migrants were observed, particularly in migratory shorebirds (~4% per year), in line with broader regional trends. Several introduced species saw marked increases in the detection arm which were not mirrored in the conditional abundance arm, suggesting range expansion. Our results demonstrate that mixed models applied to dense urban citizen science data can reveal meaningful trends without dedicated survey protocols.

A462 Talk

From ringing to resilience: a 10-year case study from Khurkh Bird Ringing Station, Eastern Mongolia

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Keywords: Khurkh Bird Ringing Station, Long-term monitoring, Station sustainability, Capacity building, Community engagement, Eastern Mongolia

Bird banding stations in Asia often operate with limited staff, unstable funding, and poor integration into research and conservation networks. We present Khurkh Bird Ringing Station as a 10-year case study of how a resource-limited station can develop into a resilient, multifunctional platform. Established in 2015 as Mongolia's first site-based bird ringing station, Khurkh has maintained standardized bird banding during migration seasons while expanding its roles in research, training, education, conservation, and international collaboration. Its 10 years of operations have been sustained through volunteers, institutional support, project partnerships, and non-financial support. Structured placements have trained Mongolian students and supported university theses and scientific publications, while continued interaction with international participants has strengthened bird banding protocols and research capacity. The station has also connected ringing with public outreach, community engagement, and threatened-species conservation, including international collaborative work on the Yellow-breasted Bunting. Building on this model, the Wildlife Science and Conservation Center established two additional stations. Together with two stations operated by other organizations, Mongolia now has five bird ringing stations. The Khurkh model highlights five priorities for resilient Asian bird ringing stations: standardized long-term monitoring, structured training, mutually beneficial partnerships, integration with education and conservation, and clear demonstration of social value.

A463 Poster

Body mass changes in songbirds stopping over at the unexplored area of the East Asian–Australasian Flyway

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Keywords: Migration, Bird, Middle Lena, North-East Asia, Bird banding

Stopover ecology of migratory songbirds remains poorly studied in the northeastern part of the East Asian–Australasian Flyway despite its importance for understanding migration strategies. Since 2023, standardized bird ringing has been conducted at two ringing stations in Yakutia, Russia, located in the middle reaches of the Lena and Aldan rivers. These stations represent one of the few long-term ringing efforts in this poorly explored region of the flyway. Using ringing data collected during spring and autumn migration from 2023 to 2026, we compare two approaches for assessing body mass changes during stopover. The first approach examines seasonal patterns using only first captures of individual birds, whereas the second estimates individual body mass change from recaptured birds. Analyses will be conducted for five common migratory passerine species to evaluate the consistency between population-level and individual-level estimates of body mass dynamics. This study provides the first comparative assessment of these analytical approaches using long-term ringing data from northeastern Asia. The results will improve our understanding of fuel deposition during stopover and evaluate whether first-capture data can serve as a reliable alternative when recapture rates are low, providing practical guidance for bird-ringing stations across the East Asian–Australasian Flyway.

A465 Talk

Larger wetlands around airports in East Asia could reduce runway crossing of migratory waterbirds

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Keywords: Aviation safety, Bird strike, Human-wildlife conflict, Mist net, Satellite tracking, Wildlife management

Preventing bird–aircraft collisions requires evidence on how birds encounter airport airspace, yet habitat associations may change with spatial scale and between initial encounter and repeated visits. We used 9.5 million GPS fixes from 54 Black-faced Spoonbills *Platalea minor* – a vulnerable waterbird species, tracked during 2019–2024 to quantify runway crossings in airports in East Asia. We tested diel distance, conditional stopping and wetland associations along 0.5–5-km runway buffers. More than 85% of satellite-tagged Black-faced Spoonbills

entered the 13-km buffer zone of an airport (164 airports in total) during their annual cycle. Of 193,454 flight fixes within airport buffers, 89.0% were below 200 m, and median crossing altitude was 129 m. Wetland cover did not consistently predict whether a runway crossing occurred. Among bird–airport pairs with crossings, however, greater wetland cover within 3–5 km buffer was consistently associated with fewer repeat crossings. At 4 km, a one-standard-deviation increase in wetland cover corresponded to incidence-rate ratios of 0.29–0.43 across complementary models. Birds remained farther from airports at night, with the largest modelled difference within 5 km. Habitat interventions should protect alternative wetlands within 5 km and avoid assuming that indiscriminate wetland removal will reduce crossing.

A466 Talk

The phylogeographic structure of avian Haemosporidians in *Zosterops* White-eyes of the Island of Sri Lanka

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Keywords: Haemosporidian parasites, Haplotype networks, Host-parasite interactions, *Zosterops* White-eyes, Tropical islands

Haemoparasites transmitted by Dipterans can be a significant fitness cost on wild bird populations. Avian haemosporidians (*Haemoproteus*, *Plasmodium*, and *Leucocytozoon*) infect birds across many terrestrial ecosystems, showing parasite dynamics along environmental gradients like elevation. Sri Lanka houses two distantly related white-eye species: Oriental White-eye *Zosterops palpebrosus* found primarily in the lowlands and the endemic Sri Lanka White-eye *Zosterops ceylanensis* confined to the higher elevations up to 2500 m. This study examined how haemosporidian communities are structured across this elevational gradient. Here we show that haemosporidian infection is widespread and genetically diverse (at Cytochrome b) across this gradient. Overall prevalence was 58.2% (68.2% in *Z. palpebrosus*, 51.5% in *Z. ceylanensis*), with *Haemoproteus* as the dominant genus in both hosts. Sequencing recovered 16 unique Cytb haplotypes forming a star-like network radiating from a single dominant *Haemoproteus* haplotype, a pattern more consistent with recent diversification and host-switching than with long-established, host-specific lineages. The infection probability declined only weakly with elevation in both species (GLM, $p > 0.05$). These results indicate that haemosporidian communities in Sri Lankan white-eyes are structured more by elevation-linked transmission dynamics than by strict host specificity.

A467 Talk

New perspectives on waterbird migratory corridors in the Central Asian Flyway, with a focus on the role of the Himalayas and the Tibetan Plateau in shaping connectivity

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Keywords: Bird migration, CAF, Geographical barriers, GPS-tracking, Indian subcontinent, Sri Lanka

The Central Asian Flyway (CAF) is uniquely shaped by the Himalaya–Qinghai–Tibetan Plateau complex, a geographic feature that influences migratory route selection of waterbirds travelling between breeding grounds in Eurasia and Central Asia, and the primary non-breeding region of the CAF; the Indian subcontinent. Using published and unpublished telemetry data, we digitized unique migratory trajectories and applied line-density analyses standardized across species to identify migratory pathways and areas of convergence. We identified three broad migratory corridors: i) the Western Asian Lowland Corridor, comprising western and eastern branches that bypass the Central Asian mountains to the west; ii) the Pamir-Karakoram Corridor, at the Upper Indus-eastern Hindu Kush-Pamir-Karakoram convergence; and iii) the Eastern Himalayan Corridor, encompassing routes through Sikkim-Bhutan Himalayas, Brahmaputra Valley, and eastern circum-Himalayan pathways. We interpret these corridors as generalized and flexible pathways, with populations using multiple corridors depending on geography, season, and migration strategy. Emerging evidence highlights migration routes that do not conform to these corridors, including direct high-altitude crossings of the Central Himalayans. This synthesis consolidates the knowledge of waterbird migration within the CAF, identifies research gaps, and provides a quantitative framework for future research and conservation planning.

A468 Poster

Exploring the use of Bluetooth Low-Energy tags on birds across an urban-forest gradient in Singapore

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Keywords: Bluetooth Low-Energy, Urban ecology, Movement ecology, Wildlife tracking, Ecological connectivity

Wildlife tracking is a key tool for understanding animal movement, landscape connectivity, and ecological processes relevant to conservation planning. In highly urbanised landscapes

such as Singapore, identifying and validating remaining ecological corridors facilitating movement between core habitats is important for maintaining population connectivity and gene flow. However, obtaining empirical data demonstrating corridor usage remains challenging. Satellite and radio-telemetry methods have been used to track birds in Singapore, but various limitations constrain their application to few individuals. Bluetooth Low-Energy (BLE) tags are relatively lightweight and inexpensive, providing an alternative for collecting movement data. However, their application in forests may be hampered by a lower density of mobile users. In this study, bird species spanning an urban-forest gradient were fitted with BLE tags. We assessed the quality and density of recovered movement data and compared detection patterns over varying landscapes. Expectedly, detection rates in urban areas were higher given the amount of devices capable of detecting BLE signals. More encouragingly, substantial detections were also recorded in green mixed-used areas that may serve as vital corridors to other forest patches. Our preliminary results suggest BLE tags may be more effective for tracking forest-associated birds than expected, particularly in areas straddling suburban land types.

A469 Talk

Tracing the movement networks of invasive House Crows in Singapore

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Keywords: Bluetooth-Low Energy (BLE) tags, Urban ecology, Movement ecology, Urban invasive birds, Wildlife tracking, Social networks

The House Crow *Corvus splendens* is a highly invasive human commensal widely introduced into many countries. Present in Singapore since the 1940s, they are now a major source of conflict for native species and humans. Aside from ascertaining their population size and distribution, informed management methods would benefit from a clearer understanding of their space usage across Singapore. Previous studies using radio-tracking limit our current knowledge to a few tracked individuals with limited spatial fixes. Here, we deployed Bluetooth Low-Energy (BLE) tags, leveraging high smartphone device penetration across a highly urbanised landscape. These lightweight tags were fitted on crows using custom 3D-printed backpacks, acting as beacons triggering proxy location uploads from nearby Apple devices within ~100 m, thereby tracking them for long periods at lower cost. Given high data density and systematic error arising from proxy locations linked to each deployed tag, we designed and tested analytical methods to process data collected during stationary periods. We pooled individual movement tracks for ~100 individuals across age cohorts to identify potential aggregation nodes and movement corridors. Our findings indicate potential substructure in the wider movement networks.

A470 Talk

Back from the brink, the recovery efforts for Maratua Shama at TSI-PCBA

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Keywords: Conservation breeding, *Ex-situ*, Extinct in the wild, Forgotten species

Conservation breeding is often the last hope for some of the world's most threatened species. Many of Indonesia's Songbirds are on the very verge of extinction and may well be among the most threatened species worldwide. At Taman Safari Prigen Conservation Breeding Ark (PCBA) we are working to establish safe ex-situ populations to safeguard species from looming extinction. One such species is the Maratua Shama *Copsychus barbouri* which is highly likely extinct in the wild and only persists at PCBA. Starting from an alltime low of only eight globally known individuals we are working towards not only a safe ex-situ population but also the timely return of the world's largest Shama to its native Island. The Maratua Shama's continued existence is clear proof of how efficient ex-situ conservation can work and how much individual zoos can contribute to the survival of species on the very brink of extinction.

A471 Talk

Ecological characterization of camouflage and mimicry in the Sri Lanka's Ghost Bird *Batrachostomus moniliger*

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Keywords: Camouflage, Reptile mimicry, Background matching, Bioclimatic variables, Biogeography, *Batrachostomus moniliger*

The Sri Lanka Frogmouth, locally known as the Ghost Bird, is a highly cryptic nocturnal insectivore endemic to Sri Lanka and the Western Ghats of India. Using a comprehensive ecological characterization of this species, integrating morphology, plumage, genetic and habitat data from 14 individuals sampled across the island we studied its predator avoidance strategy. Molecular phylogenetic analysis confirmed that Sri Lankan and Indian populations are conspecific. The species was found to employ a two-layer, distance-dependent anti-predator defense system, combining background matching camouflage at long range with a close-range reptile mimicry display involving gape opening, head feather erection and snake-like vocalizations. Plumage analysis showed that coloration is associated with the structural complexity and color of local habitat. The bill morphology and facial bristles showed correlations with bioclimatic variables. Our analysis shows that this specie's plumage and behaviour facilitate its crypsis in its highly diverse and predator rich forest community.

A472 Poster

Linking citizen science and spatiotemporal land use–land cover to model bird encounter rate and relative abundance across Uttar Pradesh, India

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Keywords: Citizen science, Remote sensing, General Additive Model (GAM), Random Forest Model (RFM), Avian ecology, Urban birds

Background: Bird populations are gradually shaped by changing landscapes, compelling spatiotemporal approaches that combine citizen science observations with annual land use–land cover data. Objective: This study aims to evaluate the influence of land use-land cover on abundance of multiple bird species across Uttar Pradesh using eBird dataset. Method: eBird observations (2017–2025) were integrated with annual 10-m Sentinel-2 land use–land cover products. Here we used semi-parametric models, General Additive Models and Random Forest Models were used for fitting models of relative abundance and Encounter Rate respectively to predict the response. Results: Model estimates of Relative Abundance were less variable than those of Encounter Rate across species. Relative abundance models showed a relatively consistent spatial pattern and high correlation between estimates. Conclusion: This integrative framework grants large-scale biodiversity monitoring by linking citizen science with annual land use–land cover dynamics, providing a scalable tool to guide conservation priorities and adaptive landscape management.

A473 Talk

Microplastic contamination across urban-rural gradient in terrestrial birds

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Keywords: Microplastics, Organ accumulation, Terrestrial birds, Urban-rural gradient, Reproductive toxicity, Sri Lanka

Microplastic (MP) pollution is an emerging threat in terrestrial ecosystems, yet South Asian biota remains poorly studied, especially at the organ level. This study investigated organ-specific MP accumulation in Sri Lankan wild birds across an urban-rural gradient and evaluated reproductive effects through a controlled low-density polyethylene (LDPE) dietary trial in Japanese Quails *Coturnix japonica*. 11 wild carcasses (9 species) were dissected; the kidney, gastrointestinal tract, brain, liver, lung, and heart were digested and analyzed by

fluorescence microscopy. 24 captive quail were assigned to three LDPE treatment groups (equivalent to human dietary MP exposure, 10×, and 100×) and a control. We recorded tissue burden, egg production, hatching success, and offspring morphology. MPs occurred in all organs of all specimens, highest in the kidney (23,484.84 MPs/g), followed by the gastrointestinal tract (16,096.72 MPs/g) and brain (9,973.73 MPs/g). Urban and rural birds exceeded forest birds in whole-body load. No linear dose-response was observed. However, egg production fell 82%, hatching success was 10%, and surviving hatchlings showed skeletal deformities. Our findings mirrored human postmortem data and MP's potential role in affecting pathophysiological pathways. Reproductive toxicity, even at background concentrations raised concerns of urban bird communities and the safety of their diet in urban landscapes.

A474 Poster

Call combinations reduce ambiguity of alarm signals in Azure-winged Magpies

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Keywords: Alarm call, Combination, Semantic, Animal communication

Human language achieves rich meanings by combining semantic units into complex structures. Recent studies suggest similar compositional processes in animal communication, yet little is known about how receivers perceive and process call combinations. Azure-winged Magpies *Cyanopica cyanus* possess a flexible alarm call system comprising three notes (a, b, and c), which form two distinct alarm calls: A (a) and B (b-cxn). Previous studies showed that A varies in length with predator type or threat distance, while the relative use of A and B varies with threat distance. We hypothesized that B combines A and cx(n+1), thereby reducing A's ambiguity. Playback experiments showed that A elicited rapid scanning of the ground and sky, whereas cx(n+1) elicited sustained attention toward the sky. B elicited more head-up responses than A and increased head-up responses relative to cx(n+1) over time. Magpies responded similarly to natural B and artificial B, in which b was replaced by a + c, although artificial B increased head-down responses. Replacing b with a produced a similar effect. Reversing the order (cxn-b) delayed the increase in head-up responses. Together, these findings suggest that syntax enables signalers to encode composite meanings while reducing ambiguity in receivers' interpretations.

A475 Poster

Acoustic distance, not phylogenetic relatedness, predicts unlearned recognition of heterospecific snake alarm calls in three sympatric parids

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Keywords: Referential alarm call, Nestling fledging response, Signal generalization, Innate recognition template, Playback experiment, Paridae

Paridae nestlings show an unlearned fledging response to parental snake alarm calls, sometimes heterospecific ones, but relatedness and acoustic distance usually covary, leaving their separate roles unresolved. We used a natural dissociation among three parids: for Oriental Tit *Parus cinereus* nestlings, Varied Tit *Sittiparus varius* and Marsh Tit *Poecile palustris* diverged at the same node and share a habitat, holding relatedness and exposure opportunity constant while acoustic distance varies. Snake alarm calls from 31 nests were annotated note by note. Atonal notes yielded 11 phrase-level variables analyzed with varimax-rotated PCA, variance components and permutation ANOVA. A frequency component dominated species-level variance between Oriental and Marsh Tit, but temporal components accounted for little. In center frequency, Marsh Tit lay 4.36 between-nest SD from the Oriental Tit mean but 0.91 from the Varied Tit. Oriental and Varied Tit nestlings fledge to conspecific and to each other's calls (Ha et al. 2023). To Marsh Tit calls, no Oriental Tit brood fledged (0/21), whereas 12/21 Varied Tit broods did (57%). Responses thus tracked acoustic distance rather than relatedness or exposure. Stimuli varying only in frequency should identify the tuned features.

A478 Talk

Bird window collision in India - what do we know and where do we go from here

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Keywords: Collision, Wildlife rescue organisation, Glass, Citizen science, Architecture, Regional patterns

We analysed 1,044 Bird Window Collision (BWC) data points from India to find that 110 bird species are victims including species listed under the IUCN global Red ist, India's Wildlife Protection Act, 1972 & the Convention on Migratory Species (CMS). While about 15% of our data comes from citizen science platforms like iNaturalist, eBird, birding focussed pages on Facebook, over 85% of our data comes from from two wildlife rescue organisations (WROs) underlining the important role WRO's and limited role of citizen science and other methods in colecting data on BWC. We found BWCs are wide spread, including from global

biodiversity hotspots of the Western Ghats and Eastern Himalayas. Even small increase in buildings and increasingly popular use of glass, especially reflective glass in otherwise less disturbed areas results in BWC. Fast low fliers like the Emerald Dove were more prone to BWC. While a majority of the species collided through the year, certain species like the Black-backed Dwarf Kingfisher & the Indian Pitta showed seasonal patterns related mostly to autumnal migration, similar to findings from Singapore. The above patterns set India & most likely forested tropics apart from North America where much of the current BWC data is from.

A481 Talk

Avifauna as bioindicators of desert restoration success: a first-year monitoring assessment from Sharaan National Park, Saudi Arabia

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Keywords: Arid ecosystem restoration, Avian community ecology, Distance sampling, Land degradation, AlUla, Desert birds

Large-scale indigenous vegetation restoration is underway across AlUla County, Saudi Arabia, to address land degradation from unmanaged rangeland and off-road use, with success thus far monitored solely through plant survival metrics. We initiated an avifauna monitoring programme in Sharaan National Park (SNP) to test whether birds can serve as bioindicators of biodiversity recovery. Between spring and autumn 2025, we surveyed 36 line transects across a restored sector (AlMajiz Project Site, 47.9 km²) and an adjacent unrestored control sector (16.6 km²) using distance-sampling protocols, repeated at least six times per season. Across 730 transect observations we recorded 1,692 individuals from 54 taxa, including four species new to the SNP baseline inventory. Coverage-based rarefaction revealed clear spatial differences in species richness and Shannon diversity between treatments. Restoration status significantly affected species assemblage composition and feeding guild structure, driven mainly by species accumulation and subtle abundance shifts rather than turnover of dominant taxa. Estimated densities were generally higher in restored areas, especially for larks (Alaudidae), wheatears (*Oenanthe spp.*), and swallows/martins (Hirundinidae). Observer experience significantly affected detection rates, underscoring the need for standardized training. These results show avifauna monitoring can meaningfully track restoration outcomes in arid ecosystems, providing a foundation for a repeatable biodiversity indicator system.

A482 Talk

Changes in nesting preferences of the invasive House Crow *Corvus splendens* after two decades in Singapore's evolving urban landscape

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Keywords: Urban invasive birds, Nest site selection, Behavioural plasticity, Tree structural traits, Population control, Wildlife management

Globally, invasive birds have caused significant economic and environmental harms in cities. The Indian House Crow *Corvus splendens* is a pervasive urban commensal that causes disamenities and threatens native biodiversity in its introduced range. Beyond direct population control, habitat modification is crucial for limiting nesting opportunities. While past studies identified factors shaping crow nesting preferences, none had examined how changing landscapes and food availability influence nesting preferences over a prolonged period. Our study revisited historical findings, comparing them with current data to track long-term behavioural shifts. We surveyed 60 nesting and non-nesting trees, incorporating novel LiDAR-based measurements of terminal branch angles. After two decades of urban transformation, crows continued to select particular tree types but showed stronger associations with taller trees, larger branch angles and proximity to human infrastructure. Building distance was the strongest predictor of nesting probability, likely due to anthropogenic food availability. These findings demonstrate the adaptability of house crows as urban landscapes evolve, highlighting the need to manage food sources and diversify urban planting palettes to discourage communal nesting in highly developed urban spaces.

A483 Poster

DNA barcoding of passerine birds in Iran

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Keywords: COI gene, Genetic diversity, Selection, Species delimitation

Exploring genetic diversity is essential for precise species delimitation, especially within taxonomically complex groups like passerine birds. Traditional morphological methods often fail to resolve species boundaries; however, DNA barcoding, particularly through the mitochondrial cytochrome c oxidase subunit I (COI) gene, provides a powerful complementary method for accurate species identification. This study establishes a comprehensive DNA barcode library for Iranian passerine birds, analyzing 546 COI sequences from 94 species across 23 families and 53 genera. We observed a pronounced barcode gap, with average intraspecific divergence at 0.41% and interspecific divergence at 18.6%. Notable intraspecific variation emerged in the Persian Nuthatch *Sitta tephronota* and the Lesser Whitethroat *Curruca curruca*, while the European Goldfinch *Carduelis carduelis* and the Grey-crowned Goldfinch *Carduelis caniceps* showed limited genetic differentiation despite marked morphological distinctions. Phylogenetic analysis revealed significant east-west genetic splits in *C. curruca* and *S. tephronota*, reflecting Iran's geographic and

zoogeographic boundaries. These findings demonstrate the effectiveness of DNA barcoding in elucidating biogeographic patterns, emphasizing Iran's key role as an ornithological crossroads for avian biodiversity. Moreover, our results suggest that much of the genetic variation in the COI gene arises from synonymous mutations, highlighting the role of purifying selection in shaping mtDNA diversity across species.

A484 Talk

Preliminary study on breeding and migration of the Blackthroat *Calliope obscura*

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Keywords: Blackthroat, Breeding, Migration

Basic biological data of the Blackthroat have long been scarce, with previous research mostly focusing on its breeding ecology, territory and nest-site selection, as well as song characteristics. In recent years, we conducted a preliminary investigation on the breeding activity rhythms and migration patterns of Blackthroats. 1) Blackthroats arrive at breeding grounds from late April to before May 10. Breeding activities last until late June when fledglings leave nests. Autumn migration initiates from late August to before September 10, and pre-migratory moult is inferred to occur prior to departure. 2) Within the study area, Blackthroats occupy elevations ranging from 1900 m to 2500 m. Territories cover vegetation types from low-altitude mixed coniferous-broadleaf forests to high-altitude shrublands, all featuring dense stands of Qinling Arrow Bamboo *Fargesia qinlingensis*. Nests are generally built on steep slopes at bamboo thicket edges, within litter heaps or earthen cavities on the ground. 3) Blackthroats exhibit strong behavioural responses to conspecific song playback. However, their habit of moving through dense bamboo thickets makes singing individuals extremely difficult to visually locate, and recapture of ringed birds is highly challenging. Accordingly, individual behavioural studies must rely on indirect analytical methods such as territory delineation and song signature discrimination.

A485 Poster

Satellite tagging of a Lappet-faced Vulture *Torgos tracheliotos* chick in AlUla, Saudi Arabia: methodological lessons from two field missions

Benjamin Lee[1], Borut Rubinic[1], Kevin Webb[2], Joseph Azar[2], Abdulrazaq Alatawi[2], Abid Mehmood[1], Anastasiia Vysokikh[1], Sultan Alsubaie[2], Ricardo Ramalho[2]

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Keywords: Movement ecology, Animal welfare, Haematological screening, Vulture restaurants, Field methods, Post-fledging behaviour

The Lappet-faced Vulture *Torgos tracheliotos*, listed as Endangered on the IUCN Red List, is a species of conservation concern in Saudi Arabia, yet its ranging behaviour, habitat use, and breeding ecology remain poorly documented. We undertook two field missions (May and June 2026) to satellite-tag vultures near AlUla, targeting both nestlings and adults. Adult capture attempts using noose carpets at inactive nests and vulture restaurants were unsuccessful, despite confirming at least four adults and multiple breeding pairs within the study area. On 13 June 2026, a 7.5 kg chick was fitted with a satellite transmitter using a leg-loop harness with a nitrile degradation ring, following morphometric measurements, a health assessment, and blood sampling for comparison against established reference values. The bird fledged several days later and continued to roost at the nest for more than a month post-fledging. We discuss the welfare and data-yield trade-offs between leg-loop and backpack harness designs, and between nitrile and standard attachment rings, alongside recommendations for improving adult capture success, including extended vulture restaurant provisioning, camera-trap monitoring of approach behaviour, and longer trapping windows. These findings offer practical guidance for future large raptor tagging programmes in arid environments.

A486 Poster

Poaching-driven decline and recovery prospects for the Grey-backed Myna in eastern Java

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Keywords: Grey-backed Myna, Population recovery, Savanna restoration, Poaching, Baluran National Park, Alas Purwo National Park

The Grey-backed Myna *Acridotheres melanopterus tricolor*, a subspecies of the Black-winged Myna, has undergone severe decline across three principal historical strongholds in eastern Java: Baluran, Alas Purwo and Meru Betiri National Parks. Long-term observations, recent surveys and bird-trade investigations indicate that illegal capture has been a major pressure driving this decline. SafeNest Indonesia surveys detected only two individuals in Alas Purwo and none in Meru Betiri, while market investigations recorded Grey-backed Mynas in trade, including birds reported by traders as originating from Baluran. In contrast, Baluran retains the largest known wild population: a 2017 distance-sampling survey estimated 168 individuals (143–192), while monitoring in June–July 2026 recorded more than 300 individuals in Bekol Savanna. Since 2016, conservation in Baluran has combined savanna restoration, invasive *Acacia nilotica* control, native vegetation recovery, habitat enrichment, water provision, population monitoring and conservation education, implemented collaboratively by Copenhagen Zoo and the Ministry of Forestry of Indonesia through Baluran National Park. In Alas Purwo, BISA Indonesia, supported by Copenhagen Zoo through the SafeNest Indonesia Programme, is developing population-enhancement strategies including habitat

assessment, community engagement, breeding, translocation and soft release. Baluran's experience may provide a practical model for restoring depleted populations elsewhere.

A487 Poster

Tree cavity-rich farm landscapes sustain breeding populations of the endemic and Endangered Forest Owlet in Dangs, India

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Keywords: Forest Owlet *Athene blewitti*, Occupancy modeling, Habitat selection, Agro-forest matrix, Breeding success, Tree cavities

The Forest Owlet *Athene blewitti* is a rare, endangered, India-endemic species rediscovered in 1997 after being lost to science for 113 years. Its western range limits were identified only recently, with few studies on landscape-level drivers of persistence. We conducted systematic occupancy surveys during the 2024–2025 breeding season (Nov–Jun) in Dangs, Gujarat, using 164 one-km^2 grids, each visited four times. The species was detected in 123 grids, with confirmed breeding in 54. Data were analyzed using multi-state occupancy models with 12 geographic, land-use, and anthropogenic covariates as predictors of occupancy and reproductive success. The top model identified percentage cropland and tree cavity availability as key occupancy covariates, yielding an occupancy probability of 0.974 (±0.044 SE) and a reproduction probability of 0.660 (±0.070 SE). Contrary to previous assumptions, cropland positively influenced occupancy (β = 0.919 ± 0.495), while slope had a negative effect (β = -0.652 ± 0.376). Tree cavities were strongly linked to both occupancy (β = 2.107 ± 1.033) and reproductive success (β = 0.666 ± 0.311). With over 200 mature individuals and 104 juveniles recorded, Dangs likely harbors one of the largest known populations, a global-stronghold for the species. Cavity-rich trees in farmland are vital for owl persistence.

A489 Talk

Integrating bird ringing, tracking and community-based monitoring in Kazakhstan: research, conservation and networking along the Central Asian Flyway

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Keywords: Bird banding, Shakpak Pass, Banding station, Migration, Bird watch, Bird count

Kazakhstan lies at the centre of the Central Asian Flyway and has nearly a century of bird-ringing history. We synthesize long-term ringing records, standardized migration counts, recovery data, GPS/GSM tracking and community-supported observations to demonstrate how complementary methods can strengthen migration research and conservation. Long-term ringing at Shakpak Pass provides information on migration phenology, abundance and

individual recaptures, while recoveries reveal broad migratory connectivity across Eurasia. Recent telemetry studies add fine-scale information on routes, stopover sites and seasonal movements, and standardized counts by professional ornithologists and trained volunteers extend monitoring to species and periods not fully represented in capture data. Birdwatcher observations and citizen science platforms can further expand spatial coverage beyond permanent monitoring sites. Together, these approaches provide a multi-scale framework for detecting population change, identifying important migration corridors and stopover areas, and supporting conservation priorities. However, monitoring effort, data accessibility and methodological standardization remain uneven across Central Asia. We propose strengthening a coordinated flyway-scale network through standardized ringing and counting protocols, targeted tracking, digitization of historical records, interoperable databases, volunteer and bander training, and cross-border collaboration. Integrating long-term datasets, modern tracking technologies and community participation could substantially improve understanding and conservation of migratory birds along the Central Asian Flyway.

A490 Talk

Bioacoustic evidence reveals a cryptic taxon in the Rufous-tailed Shama *Copsychus pyrropygus*

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Keywords: bioacoustics, cryptic taxon, Borneo, conservation, shamas

Avian taxonomy has traditionally relied heavily on morphology, leading to many cryptic taxa being overlooked. The Rufous-tailed Shama *Copsychus pyrropygus*, ranging across Sumatra, the Malay Peninsula, and Borneo, has always been considered monotypic. Being morphologically indistinguishable across its range, this taxon has no synonyms at all, a rare characteristic for Sundaic birds. We conducted a bioacoustic analysis covering over 100 recordings of over 40 individuals of *C. pyrropygus* from online repositories. Our results indicate that while all populations of *C. pyrropygus* utter a one- or two-note vocalisation, the Bornean form additionally has a uniquely complex song usually comprising three to nine notes within a motif. Our work reveals that the Bornean population of *C. pyrropygus* is bioacoustically unique and might represent a cryptic and undescribed taxon. As the Rufous-tailed Shama is currently considered a Near Threatened species, its taxonomic classification may have repercussions on conservation efforts.

A491 Talk

Conserving the ecological connectivity of the Bar-headed Goose, an iconic Central Asian Flyway specialist

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Keywords: Ecological Network, Conservation, Connectivity, Bar-headed Goose

The Bar-headed Goose *Anser indicus* is largely restricted to the Central Asian Flyway and has been a species of interest and concern for several reasons. The bulk of the population annually flies over the tall Himalayas and Hindu Kush on their migration into the Indian subcontinent. Size estimates and trends of the species have varied over time, with contrasting trends across its range, including a declining trend in India, while populations, including those on the Tibetan Plateau, appear to be increasing, potentially benefiting from warmer northern winters and food availability. Several thousand geese were killed by the Highly Pathogenic Avian Influenza H5N1 in 2005 in Qinghai Lake, China and in incidents thereafter. It forages on natural wetlands and agricultural fields and in parts of its range is reported to come into conflict with farmers. Evidence-based conservation of the species requires an in-depth understanding of its annual ecological needs, migration, breeding and non-breeding ecology. Maintaining ecological connectivity among breeding, staging and non- breeding sites is particularly important for sustaining populations across the flyway. This presentation highlights research and conservation priorities to maintain this connectivity and strengthen an ecological network of important sites across the species' range, while also addressing conflicts with people.

A493 Talk

Gut bacterial community profiles of high-altitude birds

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Keywords: Gut microbiota, Ecological patterns, High-altitude birds, Qinghai-Tibet Plateau

The gut microbiome is crucial for host adaptation to extreme environments, yet the relative contributions of host evolutionary history and current ecological niche in shaping microbial communities remain contentious, particularly in high-altitude ecosystems. Here, we characterized the fecal bacterial microbiota of 20 co-occurring bird species (spanning 2 orders, 9 families) inhabiting the Qinghai-Tibet Plateau, encompassing diverse dietary guilds ranging from granivory and insectivory to carnivory and aquatic filter-feeding. We aimed to

disentangle the hierarchical effects of host phylogeny and dietary ecology on gut community assembly. Our results revealed a two-layered structuring mechanism. At the broad taxonomic scale, phylogeny exerted a primary constraint, as waterfowl (Anseriformes: *Tadorna ferruginea* and *Anser indicus*) harbored significantly distinct microbiota compared to all passerine species, reflecting deep evolutionary divergence in host physiology and ancestral habitat. However, within the Passeriformes clade, dietary niche emerged as the dominant force overriding phylogenetic relatedness. Granivorous species (e.g. Fringillidae and Passeridae) exhibited convergent microbial enrichment in carbohydrate-metabolizing genera (e.g. *Lactobacillus* and *Faecalibacterium*), irrespective of their familial affiliations. In contrast, insectivorous species (e.g. Muscicapidae and Phylloscopidae) clustered together with higher abundances of protein-degrading and chitinolytic taxa. Notably, the carnivorous *Lanius schach* (Laniidae) displayed a distinct functional profile aligned with its high- protein intake. Our findings demonstrate that in high-altitude avian communities, gut microbiota assembly operates via a hierarchical filtering process: deep phylogenetic heritage dictates the baseline microbial architecture, while dietary convergence drives fine-scale functional adaptation within closely related radiations. This study highlights that extreme environmental pressures do not simply homogenize gut microbiomes but interact with host traits to produce complex, multi-level ecological patterns.

A494 Talk

Grassroots bird-photography livelihoods connect rural development and biodiversity conservation

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Keywords: Autonomous conservation, Benefit sharing, Community-based conservation, Local agency, Non-consumptive wildlife use, Rural livelihoods, Wildlife tourism

Across the world's biodiversity frontiers, communities living closest to wildlife have long borne the costs of protection while sharing little of its value. Hide-in-Bird Ponds (HIBPs)—grassroots, household-initiated birdwatching and photography enterprises across rural China—turn living wild birds into recurring income, offering a locally driven model of non-consumptive wildlife use. We surveyed 793 residents in 25 Yunnan communities: 15 considering establishment and 10 with operating HIBPs. Establishment support (78.4%) was associated with prior awareness, recognition of conservation value and preference for tourism-service income, but not livelihood pressure alone. In operating communities, direct operational participation was associated with all nine reported livelihood, conservation and governance outcomes; among nonparticipants, stable community-level benefit sharing was associated, after multiple-testing correction, with broader reported positive bird change, conservation willingness, hunting or poaching reduction, improved community relations and satisfaction. A national assessment has identified 251 HIBP sites across 24 provinces, documenting 524 bird species including 148 nationally protected or globally threatened species. These findings show how \ living-wildlife value, participation and community returns can connect rural livelihoods with conservation support—an organizing principle relevant to efforts across Asia to redirect communities from bird capture and trade towards non-consumptive, conservation-positive livelihoods.

A495 Talk

Influence of biological and habitat traits on day-roost dynamics of the Australasian Grass-Owl *Tyto longimembris pithecops* in Taiwan

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Keywords: *Imperata cylindrica*, Movement ecology, Satellite tracking, Micro-habitat, Grassland bird, Habitat management

The Australasian Grass-Owl *Tyto longimembris pithecops*, an endangered Taiwanese subspecies, requires clear day-roosting habitat criteria for conservation and habitat management. Using GPS satellite tracking data from 34 individuals (May 2018–July 2026), we examined how individual attributes and environmental traits influence consecutive days of use and movement distance. Males remained in single roosts significantly longer than females. During the first-brood period (September–December), individuals traveled significantly greater distances when arriving at and departing from roosts. Consecutive days of use showed no age-related differences and no direct responses to microhabitat structure, likely reflecting prior habitat filtering. In contrast, cumulative day-roost use was positively correlated with *Imperata cylindrica* dominance. Overall, day-roost dynamics of the Australasian Grass-Owl are shaped by individual attributes and seasonal phase, and the structural dominance of *Imperata cylindrica* provides a robust quantitative benchmark for future habitat management.

A496 Poster

Building a science-based conservation framework through research and stakeholder collaboration for the endangered Australasian Grass-Owl in western Taiwan

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Keywords: Australasian Grass-Owl, Conservation planning, Satellite tracking, Stakeholder collaboration

Raptors are essential ecological indicators, yet the population dynamics of the endangered Australasian Grass-Owl *Tyto longimembris* in the lowland agricultural landscape of western Taiwan remain poorly understood. Effective conservation of this species requires not only scientific research but also sustained collaboration and long-term support. Here, we developed a science-based conservation framework combining long-term monitoring, artificial perches, satellite telemetry, and stakeholder collaboration to improve our understanding of Grass-Owl distribution and habitat use across the Bazhang and Beigang River basins. Owls actively utilized six of seven newly erected perches after a two-month acclimation period. Satellite tracking of rehabilitated juveniles (up to 274 days) revealed that

Grass-Owls relied on river corridors for long-distance dispersal, roosting in grasslands during the day and foraging across agricultural landscape at night. Tracking also identified important movement corridors and highlighted threats associated with human-dominanted landscapes. Together, these evidence-based complementary approaches establish a robust scientific foundation for conservation planning and international raptor conservation strategies. This framework illustrates the power of Environmental, Social, and Governance-aligned corporate collaboration in financing critical research, securing habitat connectivity, and mobilizing community-led conservation efforts.

A497 Talk

Draft genome for the vulnerable Philippine Eagle-Owl *Ketupa philippensis* supports its placement in genus *Ketupa*

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Keywords: Genomics, Threatened species, Owls, Philippines, Endemic species

The Philippines ranks among the countries with the highest levels of bird endemism worldwide. However, this biodiversity faces numerous threats, underscoring the need for urgent and well-informed conservation efforts. Philippine owls remain particularly understudied, limiting knowledge of their biology, taxonomy, and conservation needs. Currently with 22 species of Strigiformes recorded, 16 of which are unique only to the Philippines. Conservation genomics can aid in addressing these gaps by providing insights into owl diversity. Focusing on the vulnerable Philippine Eagle-Owl *Ketupa philippensis*, this study presents the first known highly complete draft genome assembly for the species, formerly placed under the genus *Bubo* (eagle-owls). The resulting assembly was a 1.24 Gb draft genome with 91.3% completeness. Nocturnal-related gene annotations were compiled to create a comprehensive nocturnal gene database specific to the Mindanao subspecies, *K. philippensis mindanensis*. Phylogenetic ambiguities were also investigated using mitogenome- and nuclear BUSCO-based analyses, both supporting the species' recent taxonomic placement within the genus *Ketupa* (fishing-owls). The genomic resources generated provide a foundation for future studies on genetic diversity, breeding, and population genomics of this vulnerable endemic Philippine nocturnal raptor.

A498 Poster

Improving confidence in seabird impact assessments: the value of data-driven observer training

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Keywords: Seabird surveys, Observer calibration, Environmental impact assessment, Collision risk, Species identification, Vanuatu Petrel

Accurate data collection underpins the assessment of potential impacts of offshore and nearshore developments on seabirds during pre-construction surveys. Vessel-based observations are a core component of such surveys, but their reliability depends on observers accurately estimating the distance, height, and identity of birds in flight. Errors in these estimates influence density estimates, flight-height distributions, and subsequent collision-risk assessments. Addressing this is not straightforward: vessel-based calibration exercises can be costly to run, and seabird communities of the Western Pacific remain poorly understood, complicating identification and risk profiling. We present findings demonstrating that field-based observer calibration exercises improve the consistency and accuracy of vessel-based distance and flight-height estimation, and use a case study of a poorly known seabird to show the value of species-specific research for identification and range estimation. Observer calibration emerges as a simple but critical component of survey design, since small differences in estimated flight height and distance can materially affect how survey data are interpreted. The case of the Vanuatu Petrel *Pterodroma occulta* further shows how targeted research can resolve identification gaps and support predictive distribution modelling. Together, these findings show that impact assessment can be radically improved through a strategic framework addressing core knowledge gaps.

A499 Poster

Incubating alone: male parental care in a sex-role-reversed polyandrous bird

Sunilkumar Mini Alina[1], Jain Shalini[1], Székely Tamás[2], Yu-Hsun Hsu[1]
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Keywords: Incubation, Environmental variations, Sex-role reversal, Polyandrous, Uniparental care

Incubation plays a significant role in parental care, but it can be especially challenging when only one parent is responsible for the nest. This is particularly interesting in sex-role-reversed polyandrous species, where males provide uniparental care while females pursue additional mating opportunities. In the sex-role-reversed, polyandrous Greater Painted Snipe *Rostratula benghalensis*, males incubate alone under changing environmental conditions and predation risk. Using three years of video recordings from nests at Ujjani, India, we investigate how incubating males adjust nest attentiveness in relation to environmental

temperature, precipitation, laying date, and seasonal variation, and whether these behavioural adjustments are associated with nest fate. By linking environmental variation, male incubation behaviour and reproductive outcome, this study aims to improve our understanding of how parental care is maintained in polyandrous mating systems and how sex-role-reversed species cope with the constraints of uniparental incubation.

A500 Poster

Openly share mates or cheat? Alternative evolutionary routes to multiple mating in birds

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Keywords: Polygamy, Mating system evolution, Extra-pair paternity, Phylogenetic comparative methods, Path analysis

Multiple mating can benefit both sexes and can evolve through very different mating strategies. In birds, some species achieve multiple mating through social polygamy, while others evolved to be socially monogamous with extra-pair paternity (EPP). Why have these alternative strategies evolved across avian lineages? Using phylogenetic comparative methods, we reconstructed ancestral states, estimated evolutionary transitions, and evaluated how potential factors influenced these transitions. Ancestral state reconstruction weakly supported the absence of EPP and social polygamy as ancestral states. Social polygamy was evolutionarily less stable than social monogamy with EPP, and transition toward social polygamy occurred only from social monogamy with EPP. In contrast, transitions toward social monogamy with EPP evolved through two distinct pathways. These alternative transitions were associated with different life-history and social conditions, with generation length, adult sex ratio, and pair-bond duration as key predictors. Overall, our results provide an evolutionary perspective on how alternative multiple mating strategies arise and persist across avian lineages.

A501 Talk

Genome wide data recover hierarchical genetic structure and help define conservation units for the threatened Asian Houbara

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[5]*Department of Evolutionary and Environmental Biology and Institute of Evolution, University of Haifa, Haifa, Israel*

Keywords: Adaptive Evolutionary Conservation, Chromosome-level assembly, Conservation strategy, DAPC, Partially migratory species, Runs of homozygosity, Whole genome sequencing

The Asian Houbara Bustard (*Chlamydotis macqueenii*), a partially migratory bird from the western and Central Asian steppes, is listed as vulnerable on the IUCN Red List. This study reassesses the species' genetic structure using modern genomics to identify evolutionary significant units (ESUs). Following the generation of a chromosome-level de novo reference assembly and whole-genome resequencing data (114 birds, 10 locations), we integrated genetic results, migratory behaviour, and geography to identify eight hierarchically structured ESUs: four near range edges (Yemen, Mongolia, Eastern Kazakhstan, Israel) and four within the central range (Central-Eastern, Central-Western, North Iran, South Iran). Low genetic diversity and recent inbreeding make ESUs on the range periphery (Israel, Mongolia, Yemen) the most genetically threatened, consistent with the central-marginal hypothesis. ESUs do not cluster according to their migrant/non-migrant status. Geographic distance significantly shaped genetic structure, with longitudinal separation (isolation-by-distance along an east-west axis) emerging as the strongest predictor of differentiation, particularly among high-latitude migrant populations. Our findings underscore the importance of integrating chromosome-scale genomic frameworks, geographic data, and behavioural criteria to define intraspecific units that effectively address the conservation needs of widespread species with complex evolutionary dynamics.

A502 Talk

Deciphering convergent and lineage-specific genomic changes in sugar-consuming birds

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[14] *Evolution of Intelligent Minds Research Group, Max Planck Institute for Biological Intelligence, Germany*
[15] *Department of Biology, University of Washington, USA*
[16] *Department of Organismic and Evolutionary Biology, Harvard University, USA*
[17] *Department of Zoology, University of British Columbia, Canada*
[18] *School of Earth, Atmospheric, and Life Sciences, University of Wollongong, Australia*
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Keywords: Convergent evolution, Comparative genomics, Nectarivory, Sugar metabolism, Gene regulation, Positive selection

The genomic basis of dietary specialisation reveals how metabolism evolves and how repeatable evolution can be. Although high-sugar diets are linked to metabolic disease in humans, several bird lineages have independently evolved to thrive on the simple sugars in nectar and fruit. We asked how repeatable molecular evolution is by comparing shared and lineage-specific mechanisms of sugar feeding in four groups: hummingbirds, parrots, honeyeaters and sunbirds. We generated nine high-quality genome assemblies for sugar-feeding species and their closely related, non-sugar-feeding counterparts, and produced tissue-specific gene expression data for three pairs of sugar-feeding species and their non-sugar-feeding outgroups. Across protein-coding sequences, non-coding regulatory regions and expression, changes in sugar-feeding lineages affected genes involved in blood pressure regulation, lipid, amino acid and carbohydrate metabolism. These changes appeared at different levels, from single genes and regulatory elements to whole pathways. Lineage-specific signals often elaborated these same pathways, exemplified by functional changes in the honeyeater hexokinase 3 protein. *MLXIPL*, a key regulator of sugar and lipid balance, carried convergent sequence and regulatory changes across all four groups. Introducing hummingbird *MLXIPL* into a human cell line enhanced the sugar response, underscoring its role in high-sugar diets.

A503 Poster

Wintering shorebird mortality due to deterrence nets at razor clam farming mudflats in Southeastern China

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Keywords: Wintering shorebirds, Mortality, Razor clam aquaculture, East Asian–Australasian Flyway (EAAF)

Migratory shorebird populations in the East Asian-Australasian Flyway (EAAF) are declining rapidly. Recent work has quantified mortality from human activities as a direct threat, particularly from deterrence nets over razor clam beds along southeastern China coast. Because most clams are harvested before spring migration peaks, post-harvest mortality could be avoided by promptly removing the nets. However, mortality during the preceding farming season, when farmers proactively use nets to deter shorebirds from feeding on juvenile clams, has not been quantified. Here, we surveyed razor clam farms in this region during the wintering months from 2022 to 2024. We revisited randomly selected net transects to monitor the number of birds caught and quantified mortality rates. Overall, nearly 5,000 birds were recorded entangled, 88% of which were shorebirds from 22 species. Mortality levels differed from December to March, with Dunlins *Calidris alpina* and Pied Avocets *Recurvirostra avosetta* among species with the highest mortality rates. This level was much lower than in spring, yet as wintering shorebirds stay longer in these regions, cumulative winter mortality should not be ignored. Future mitigation should extend beyond the post-harvest period to reduce mortality throughout the farming season while addressing farmers' concerns over clam losses associated with wintering shorebirds.

A504 Poster

Scale-dependent taxonomic and functional β-diversity of waterbirds in coal-mining subsidence lake networks

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Keywords: Coal-mining subsidence lakes, Functional β-diversity, Landscape context, Taxonomic β-diversity, Temporal scale, Waterbirds

Artificial wetlands are increasingly embedded in human-modified landscapes, but their biodiversity value depends on how networks support complementary assemblages. We examined the taxonomic and functional β-diversity of waterbirds in 28 coal-mining subsidence lakes in Huaibei, Anhui, China, from monthly surveys in 2025. We recorded 49 species and characterized functional trait space using six AVONET traits covering morphology, movement, diet, and lifestyle. We partitioned β-diversity into turnover and nestedness-resultant components at annual and monthly scales and assessed associations with lake morphology, water quality, landscape context, and human disturbance. Annual taxonomic β-diversity was 0.420, with turnover contributing slightly more than nestedness, whereas functional β-diversity was 0.365 and was dominated by nestedness. Taxonomic and functional dissimilarities were positively correlated among lakes, but species replacement did not fully translate into functional turnover annually. Monthly taxonomic β-diversity ranged from 0.359 to 0.581, while functional β-diversity ranged from 0.609 to 0.826. Functional turnover contributed more strongly at the monthly than annual scale, indicating seasonal shifts in functional differentiation. Environmental associations were modest; landscape and shoreline context showed the strongest associations with assemblage structure. These

results highlight waterbird assemblage heterogeneity and support managing subsidence lakes as interconnected habitat networks.

A505 Poster

Intraspecific morphological variation predicts niche breadth and range size in bulbuls (Pycnonotidae)

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Keywords: Intraspecific variation, Ecological niche breadth, Geographic range size, Morphological traits, Bulbuls

Morphological variation within species may promote adaptation across ecological and geographic space, perhaps reflecting evolutionary plasticity and adaptability. Based on this concept, species with greater intraspecific variation in morphological traits may be expected to occupy broader ecological niches and larger geographic ranges. However, even in the age of global trait datasets, intraspecific morphological variation remains poorly quantified at broad taxonomic and geographic scales, limiting our understanding of how trait flexibility shapes ecological and biogeographic patterns. Focusing on 161 species of bulbuls, a widespread avian family containing some of the most abundant bird species in the world, along with some of the rarest and most restricted in range, I conducted global-scale sampling of morphological traits. These included beak shape, tarsus length and wing length, associated with dietary niche, foraging strategy and dispersal, respectively. Using phylogenetic models, I tested whether ecological niche breadth and geographical range size are predicted by intraspecific morphological variation quantified from 8156 museum specimens and 5405 live captures. I showed that morphological trait variation predicts both ecological niche breadth and geographic range size. Furthermore, widespread species exhibited greater morphological variation than restricted-range species even when comparisons were constrained to equivalent geographic extents, consistent with the hypothesis that intraspecific trait variation facilitates range expansion rather than simply accumulating as a consequence of occupying a larger range. These results identify intraspecific morphological variation as a potentially important, yet largely overlooked, predictor of ecological traits and biogeographic distributions in animals.

A506 Talk

The long-term study system of an endangered species (Crested ibis) in China

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[2]*University of Chinese Academy of Sciences, Beijing, China*
[3]*Key Laboratory of Animal Ecology and Conservation Biology, Institute of Zoology, Chinese Academy of Sciences, Beijing, China*

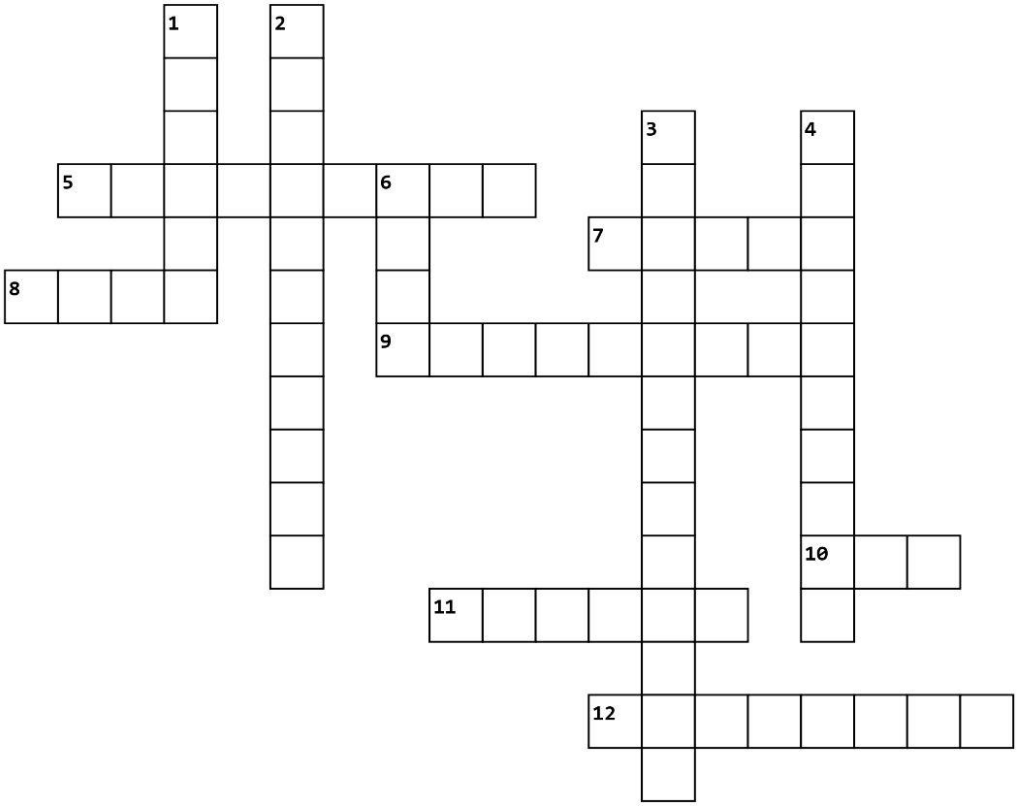
[4]*Cardiff University - Institute of Zoology Joint Laboratory for Biocomplexity Research, Chinese Academy of Sciences, Beijing, China*
Keywords: Long-term research, Individual-based research, Endangered species, Conservation biology, Population recovery

Long-term research is essential for understanding ecological and evolutionary processes over time. However, most existing long-term individual-based research systems (LIRS) focus on common, relatively stable species. Endangered species represent a distinct ecological and evolutionary context, as their contemporary dynamics are shaped not only by natural ecological and evolutionary processes, but also by human-induced historical environmental changes and long-term conservation interventions. We therefore propose extending LIRS to endangered species, building on classical research systems while incorporating their distinctive population histories, genetic backgrounds, and conservation contexts. Using the Crested Ibis *Nipponia nippon*, one of the most famous endangered flagship species, as a case study, we describe ongoing efforts to develop a LIRS through continuous individual monitoring and integration of multiple data sources. These efforts include tracking individual life histories and reproductive performance, establishing multigenerational pedigrees, collecting longitudinal phenotypic measurements, and applying quantitative genetic analyses to investigate variation in life-history traits. Establishing such systems will create new opportunities for comparative research and expand the scope of long-term ecological and evolutionary research. By linking individual-level variation with population history, genetic change, and conservation outcomes, this framework can deepen understanding of how ecological processes, genetic constraints, and conservation actions jointly shape population trajectories.

Crossword

Evolution, Genomics, Morphology, Physiology & Health

Based on AOC abstracts



Across

5. Avian genus known as a “great speciator” (9).

7. Genetic material typically inherited through the maternal lineage (5).

8. Variations at a single base-pair position in the genome (4).

9. The country where at least a third of the global population of the Critically Endangered Straw-headed Bulbul resides (9).

10. Molecule sequenced to analyse viruses in birds (3).

11. DNA sequencing platform famous for generating long reads (6).

12. Specific epithet for the Philippine Eagle (8).

Down

1. The segment of a bird’s leg located between its ankle and toes (6).

2. Specific epithet for Silver-eared Mesia (11).

3. Organisms such as ticks, mites and lice that live or feed on the outside of a host (13).

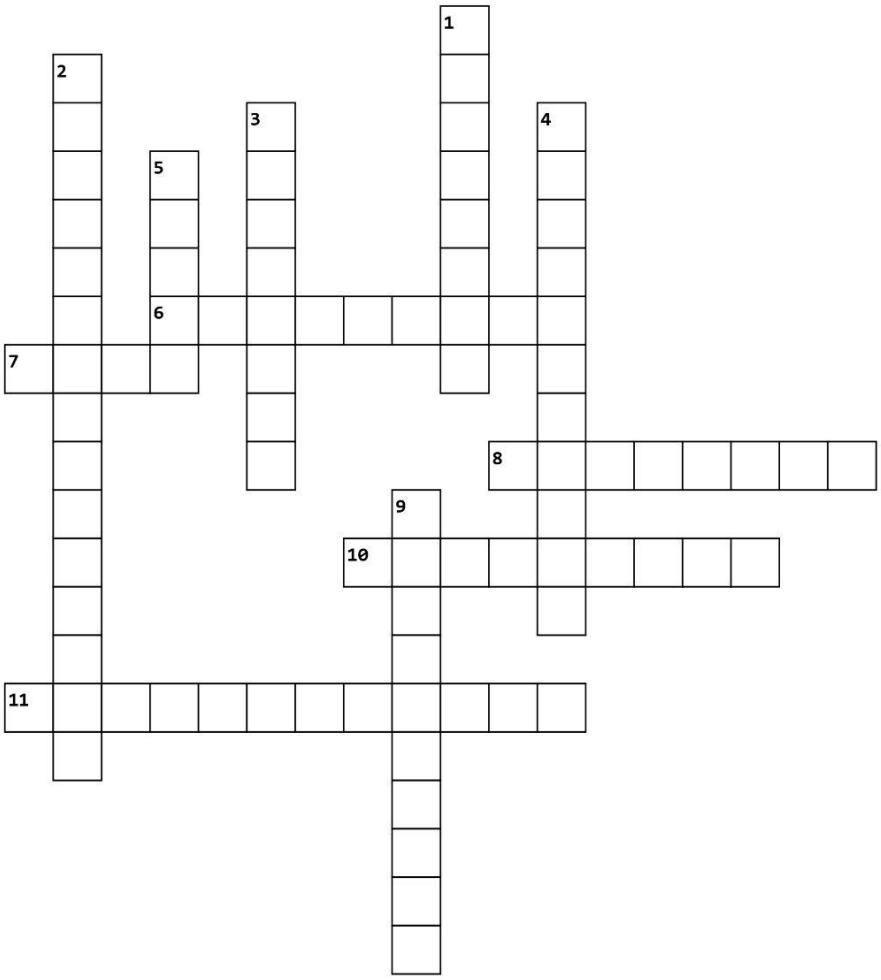
4. Animals that feed on carrion and other dead organic matter, such as vultures (10).

6. Avian genus comprising the scops owls (4).

Crossword

Urban Avian Ecology, Biodiversity Patterns & Monitoring

Based on AOC abstracts



Across

6. Man-made structure providing habitat for birds including cranes and cormorants (9).

7. Genus in the family Corvidae that includes species commonly inhabiting urban landscapes (4).

8. Genus containing the Narcissus Flycatcher (8).

10. Short-range wireless technology harnessed for tracking birds in highly urbanised areas (9).

11. The process that declines with increasing distance from the mainland in MacArthur and Wilson's Theory of Island Biogeography (12).

Down

1. Arrangement of distinct ecological communities along an environmental gradient (8).

2. Raptor adapted to nesting on skyscrapers and tall city structures (9, 6).

3. Established non-native population causing ecological harm, for example, the House Crow (8).

4. Animals with broad ecological niches and limited resource specialisation (11).

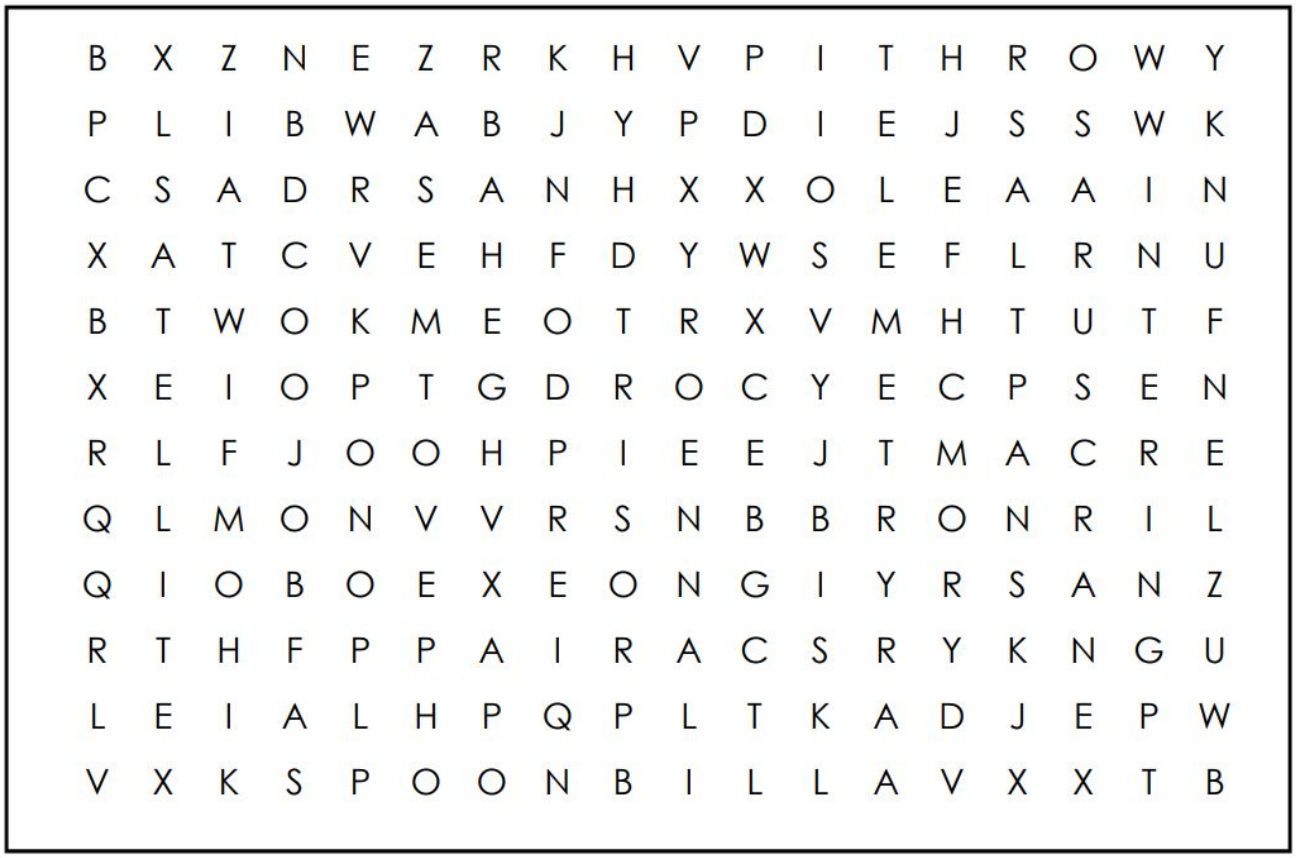
5. Asian Accipiter prone to window collisions (5).

9. Capacity for modification in response to environmental conditions, seen in urban birds (10).

Wordsearch

Migration, Flyways, Tracking & Conservation

Based on AOC abstracts



B	X	Z	N	E	Z	R	K	H	V	P	I	T	H	R	O	W	Y
P	L	I	B	W	A	B	J	Y	P	D	I	E	J	S	S	W	K
C	S	A	D	R	S	A	N	H	X	X	O	L	E	A	A	I	N
X	A	T	C	V	E	H	F	D	Y	W	S	E	F	L	R	N	U
B	T	W	O	K	M	E	O	T	R	X	V	M	H	T	U	T	F
X	E	I	O	P	T	G	D	R	O	C	Y	E	C	P	S	E	N
R	L	F	J	O	O	H	P	I	E	E	J	T	M	A	C	R	E
Q	L	M	O	N	V	V	R	S	N	B	B	R	O	N	R	I	L
Q	I	O	B	O	E	X	E	O	N	G	I	Y	R	S	A	N	Z
R	T	H	F	P	P	A	I	R	A	C	S	R	Y	K	N	G	U
L	E	I	A	L	H	P	Q	P	L	T	K	A	D	J	E	P	W
V	X	K	S	P	O	O	N	B	I	L	L	A	V	X	X	T	B

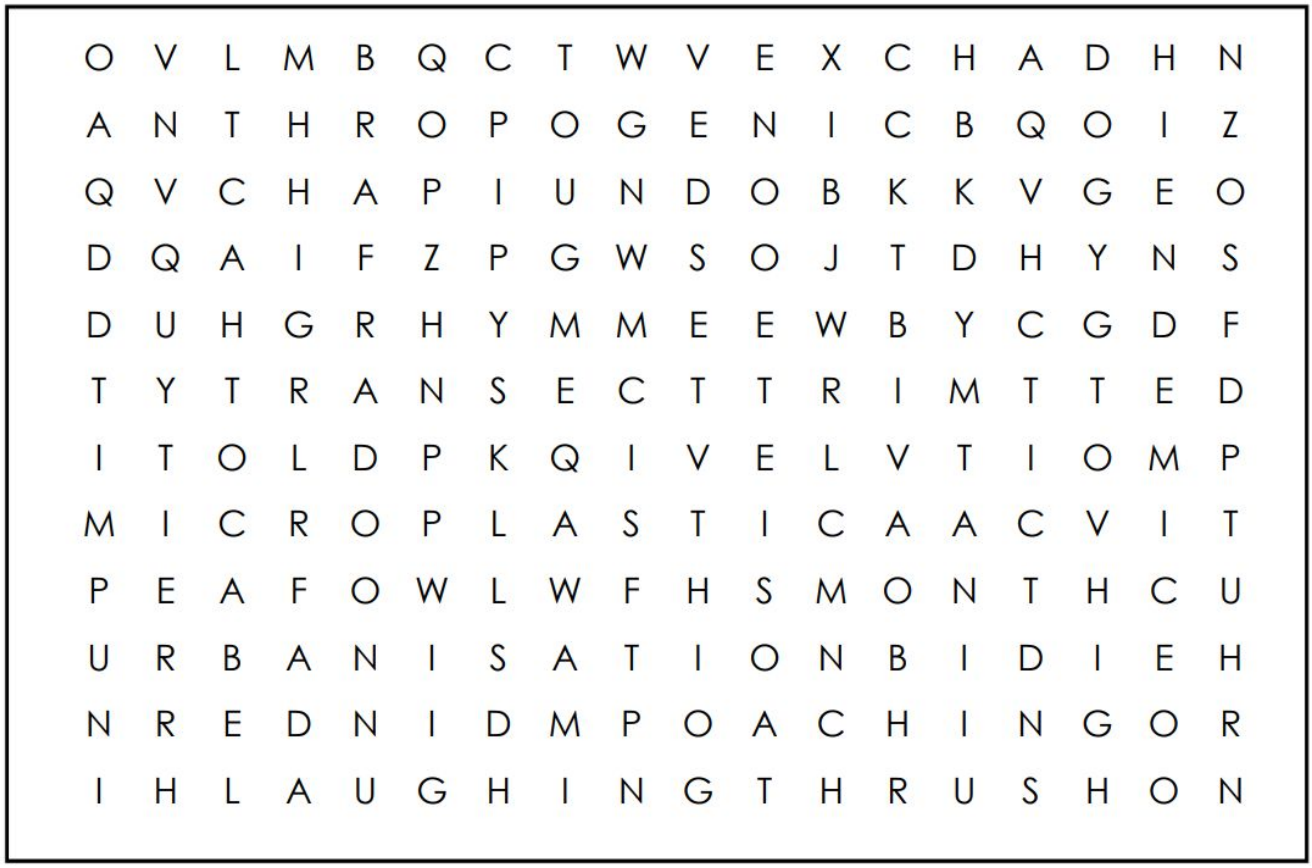
Find the following words in the puzzle.
Words are hidden → and ↓ and ↘

BLACKTHROAT
BREEDING
EAAF
GPS
SALTPANS
SARUS CRANE
SATELLITE
SHOREBIRD
SPOONBILL
STOPOVER
TELEMETRY
WINTERING

Wordsearch

Threatened Species, Wildlife Crime, Anthropogenic Impacts & Recovery

Based on AOC abstracts



O	V	L	M	B	Q	C	T	W	V	E	X	C	H	A	D	H	N
A	N	T	H	R	O	P	O	G	E	N	I	C	B	Q	O	I	Z
Q	V	C	H	A	P	I	U	N	D	O	B	K	K	V	G	E	O
D	Q	A	I	F	Z	P	G	W	S	O	J	T	D	H	Y	N	S
D	U	H	G	R	H	Y	M	M	E	E	W	B	Y	C	G	D	F
T	Y	T	R	A	N	S	E	C	T	T	R	I	M	T	T	E	D
I	T	O	L	D	P	K	Q	I	V	E	L	V	T	I	O	M	P
M	I	C	R	O	P	L	A	S	T	I	C	A	A	C	V	I	T
P	E	A	F	O	W	L	W	F	H	S	M	O	N	T	H	C	U
U	R	B	A	N	I	S	A	T	I	O	N	B	I	D	I	E	H
N	R	E	D	N	I	D	M	P	O	A	C	H	I	N	G	O	R
I	H	L	A	U	G	H	I	N	G	T	H	R	U	S	H	O	N

Find the following words in the puzzle.
Words are hidden → and ↓ and ↘

ANTHROPOGENIC
CONSERVATION
DOWITCHER
ENDEMIC
LAUGHINGTHRUSH
MICROPLASTIC
PEAFOWL
POACHING
TRANSECT
TYTO
URBANISATION
WETLAND

Word Scramble

Emerging Methods, Field Stations & Citizen Science

Based on AOC abstracts

RENADFIR

ROTMEE SINGSNE

EOTLTBHUO

RGENE MEPIAG

DIBR NGRINIG

IOUISCTSBOAC

LAETNRC NAAIS FYLAYW

CTNULRANO AIRONGIMT

ANBOIBK

BDEIR

NEAIMCH AGNILREN

RDIB DPON

Word Scramble

Breeding, Behaviour & Social Systems

Based on AOC abstracts

LSGNTENI

EAPGMI

CEPFIOCCSNI

BTNIAIUOCN

NOMAUGMOOS

NPREIDATO

EZARB NFHIC

BIMOGBN

ORSCITEPCEEIFH

ROTHGFOUM

PRUSA ESCNERIU

EAAMUGCOFL

Puzzle Answers

Crossword

Urban Avian Ecology, Biodiversity Patterns & Monitoring

Across

6. Reservoir
7. *Pica*
8. *Ficedula*
10. Bluetooth
11. Colonisation

Down

1. Zonation
2. Peregrine Falcon
3. Invasive
4. Generalists
5. Besra

Evolution, Genomics, Morphology, Physiology & Health

Across

5. *Zosterops*
7. mtDNA
8. SNPs
9. Singapore
10. RNA
11. PacBio
12. *jefferyi*

Down

1. Tarsus
2. *argentauris*
3. Ectoparasites
4. Scavengers
6. *Otus*

Wordsearch

Migration, Flyways, Tracking & Conservation

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B . . . E . . . . . . T . . . . .
. L . B . A . . . . . E . S S W .
. S A . R S A . . . . . L . A A I .
. A T C . E H F . . . . E . L R N .
. T . O K . E O . . . . M . T U T .
. E . . P T G D R . . . E . P S E .
. L . . . O H P I E . . T . A C R .
. L . . . . V R S N B . R . N R I .
. I . . . . . E O . G I Y . S A N .
. T . . . . . R A . . R . . N G .
. E . . . . . T . . D . E . .
. . . S P O O N B I L L . . . . . .
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Threatened Species, Wildlife Crime, Anthropogenic Impacts & Recovery

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. . . . . C . . . . . .
A N T H R O P O G E N I C . . . . .
. . . . . N D . . . . . E .
. . . . . W S O . T . . . N .
. . . . . E E W . Y . . D .
. . T R A N S E C T T R I . T . E .
. . . . . L V T . O M .
M I C R O P L A S T I C A A C . I .
P E A F O W L . . . . . N T H C .
U R B A N I S A T I O N . . D I E .
. . . . . P O A C H I N G O R
. . L A U G H I N G T H R U S H . N
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Word Scramble

Breeding, Behaviour & Social Systems

NESTLING
MAGPIE
CONSPECIFIC
INCUBATION
MONOGAMOUS
PREDATION
ZEBRA FINCH
MOBBING
HETEROSPECIFIC
FROGMOUTH
PARUS CINEREUS
CAMOUFLAGE

Emerging Methods, Field Stations & Citizen Science

INFRARED
REMOTE SENSING
BLUETOOTH
GREEN MAGPIE
BIRD RINGING
BIOACOUSTICS
CENTRAL ASIAN FLYWAY
NOCTURNAL MIGRATION
BIOBANK
EBIRD
MACHINE LEARNING
BIRD POND



Straw-headed Bulbul
(Francis Yap, Bird Society of Singapore)



Rose-ringed Parakeet
(Francis Yap, Bird Society of Singapore)



Willow Warbler
(Raghav Narayanswamy, Bird Society of Singapore)



Asian Tit
(Natthaphat Chotjuckdikul, Cornell Lab of Ornithology, Macaulay Library)



Chestnut Bulbul
(Su Li, Cornell Lab of Ornithology, Macaulay Library)



Rufous-capped Babbler
(Rajkumar Das, Cornell Lab of Ornithology, Macaulay Library)



Eurasian Tree Sparrow
(Natthaphat Chotjuckdikul, Cornell Lab of Ornithology, Macaulay Library)



Himalayan Bluetail
(Vineet Bajpai, Cornell Lab of Ornithology, Macaulay Library)

THIRD
ASIAN
ORNITHOLOGICAL
CONFERENCE
SINGAPORE 14 -17 NOV 2026



Soaring to New Heights in Asian Ornithology