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Uncovering the Linguistic Acrobatics of Honeyguides

Dear Fellow Ornithologists,

I am excited to share with you the latest developments that have taken place since our last issue. As the editor of our beloved magazine, it is my pleasure to introduce several new features including letters to the editor, and specialized columns on various aspects of ornithology that I believe will enrich your reading experience and expand our reach within the ornithological community.

The scientific fraternity has long been aware of the symbiotic relationship between humans and Greater Honeyguides (Indicator indicator) - birds that engage in a unique partnership with humans to access the well-guarded treasure of African Honeybees’ (Apis mellifera) hives. Honeyguides lead humans to these hives and, in return, feast on the leftover wax and larvae after the honey extraction. This coevolution highlights how humans have crafted specific calls to attract honeyguides when in search of honey.

However, a recent revelation adds a new dimension to this partnership. Greater Honeyguides are not just passive participants but active learners, adapting to the distinct dialects of their local human groups.

"Honeyguides lead humans to these hives and, in return, feast on the leftover wax and larvae after the honey extraction."
Honeyguides can distinguish and respond to locale-specific calls. The communication patterns between Yao honey hunters from Niassa Special Reserve in Mozambique and their avian partners are starkly different from those between the Hadza honey hunters in northern Tanzania and their feathered friends. Tanzanian honeyguides responded less well to Mozambican calls, and a similar pattern emerged when the situation was reversed. Birds, akin to humans, foster their cultural norms, and the dynamic between humans and honeyguides plays a crucial role in upholding region-specific interactions. The forces stabilizing and diversifying interspecies communication traditions show the potential for cultural coevolution between species.

Together, let’s embark on another exciting journey into the world of ornithology.

Best wishes,

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Article:
Dear IOU members and IOU Fellows,

To begin with, I would like to congratulate Dr. Vidya Padmakumar, editor of The Flutter, on her joining the IOU Council as the Chair of the Communications and Publications Committee. With The Flutter issue of April 2023, Dr. Padmakumar took the helm of the IOU Magazine and has taken it to a new level of ornithological information that is of global interest. In addition, she has taken it upon herself to work on upgrading the IOU Wikipedia page https://en.wikipedia.org/wiki/International_Ornithologists%27_Union and adding the IOU’s presence on the social media landscape [LinkedIn - linkedin.com/company/international-ornithologists-union/ ; Instagram – instagram.com/the_iou_ ; Threads - @the_iou_@threads.net]. Her ornithological expertise, editorial experience, and polyglot and multicultural background will contribute additional perspectives to the leadership of the International Ornithologists’ Union.

An issue that has concerned me ever since my research for my Ph.D. dissertation (Homberger 1980) has been the nexus between the welfare of wild-caught and non-domesticated captive-bred birds in captivity, their use of in research, and their trade on the international market. My assigned dissertation topic on the classification and evolution of Psittaciformes fell in a time of an economic boom that enabled aviculturists in Switzerland to acquire rare parrots in addition to the traditional aviary birds, such as canaries, budgies, and other small birds. I was able to film (with a clunky 16 mm high-speed camera) the feeding and drinking behavior of a great variety of parrot and cockatoo species. I also was able to collect a large number of specimens for my anatomical studies because few birds survived captivity for long. Many did not survive the transport from their country of origin – I have painful memories of crates full of dead parrots arriving at the airport in Zurich. It has been a source of anguish for me to see a parrot or cockatoo sitting in a cage, often by itself, since I know their social, inquisitive and inventive nature (see also Goodall 1987). Even aviaries pairs for breeding or groups of birds are depressing to me since I know the natural environment.

In the decades since my dissertation, the problem of the trade in wildlife and wild bird for the pet and aviculture markets has only been getting worse (see, for example, Beissinger & Homberger 2006; Cox & Holtermann 2018; Chan et al. 2021; Martin 2023; Kalra et al. 2024). Many NGOs address this problem at the local and national levels of the source countries through educational initiatives for children to be aware and proud of their natural patrimony and through reintroductions and releases of confiscated poached birds. These programs, however, cannot address the economic issues driving the trade in wild birds from impoverished source countries to countries in which affluent people can satisfy their desires to own exotic pets. Many (most?) people are ignorant of the dark side of their seemingly innocent pleasure in keeping and caring for pet birds. But the trade in parrots and other wildlife is as lucrative as the drug trade and is becoming a major reason for the decline of wild birds, especially parrots and cockatoos (Chan et al. 2021). Unfortunately, legislations regulating the import of exotic wildlife and parrots include loopholes and their enforcement is not of high priority for governments. Perhaps the time has come for a campaign analogous to Greenpeace’s 1984 campaign against the wearing of fur coats (see Li 2019) to enlighten the public about the accelerating disappearance of parrots in their native habitats because of land clearance to grow more food for the ballooning human population and because of capture of wild birds for the international market, the latter of which could be stopped, at least in theory, just like fashion fur coats and slavery were stopped. The important thing is that more effort and funds need to be invested in curbing the wildlife trade at the receiving countries that are driving it.
Collectors of parrots and cockatoos generally justify their hobby or business as an insurance against extinction in the wild and point to the recent reintroduction of the Spix’s Macaw into its original habitat after it became extinct in the wild for decades due to poaching and after it had been bred in captivity by wealthy collectors (see Kupferschmidt 2022). In reality, however, hobby and business captive breeding are generally dictated by passing preferences for rare species or color mutants. Captive breeding programs of parrots, such as the Puerto Rican Parrot (Koches 2022), the Kakapo (Digby et al. 2023), and the Orange-bellied Parakeet (Department of Natural Resources and Environment Tasmania 2023), show the fragility of attempts at saving species through captive breeding for later release into the wild. These attempts require huge amounts and years of sustained funding that are usually available only through government support and large numbers of dedicated biologists and staff members -- all in the face of an uncertain long-term success, especially if the cause of the threatened status of the birds is habitat destruction. Captive breeding of parrots and, especially, cockatoos is generally a difficult undertaking because of their complex behavior and psychology involved in partner selection and compatibility. That the behavior and ecology of most wild parrots is only superficially understood before captive breeding programs need to start is another exacerbating factor (see Digby et al. 2023). Captive breeding also starts a domestication process with the first breeding pairs by selecting for individuals that can adapt to captive conditions (Bussolini et al. 2023). The reintroduction of captive-bred birds into the wild may account for the low success rate (Snyder & Johnson 1988; Beck et al. 1994; Snyder et al. 1994).

I suspect that the public and government officials would be more concerned and less cavalier about the disappearance of wildlife and wild birds (Greenfield & Benato 2022) if they understood that captive breeding and reintroductions into the wild is not a realistic safety-net for saving endangered biodiversity (i.e., many species). It may be time for another Greenpeace information and education campaign to shock the public about the real costs of the exotic pet and wildlife trade. As we all know, the preservation of the natural environment with its habitants is less expensive and more sustainable than emergency programs trying to rescue iconic species.

With best wishes and regards,

Dominique G. Homberger, Ph.D.
IOU Immediate Past President
International Ornithologists’ Union
References:
Kupferschmidt, K. 2022. A wild hope: Two decades after it disappeared in nature, the stunning blue Spix’s macaw will be reintroduced to its forest home. Science 376 (6598): 1148-1153. https://www.science.org/doi/epdf/10.1126/science.add3235
LETTERS TO THE EDITOR

Post Card

Many thanks for the recent issue of The Flutter. It might be interesting for many readers of the Flutter to receive a notice on the online Eurasian African Bird Migration Atlas published last year:

Prof. Dr. Franz Baarlein
IOU Past-President 2010-2014
Institut für Vogelforschung (Institute of Avian Research), Germany

Dear Vidja,
What a good idea to remember important ornithologists! To identify the persons on the photo is an interesting and challenging task. I guess no living person ever saw one of them face to face, so an identification is only possible via (published?) photos. I suggest that you give us the names of the participants and the interested readers are able to search in their regional archives.

With kind regards and best wishes for a successful 2024.

Ulrich Tigges

How to Write to The IOU Flutter:

Brief letters with comments on articles appearing in the magazine are welcome. The editor reserves the right to edit submissions. Please include an email address.

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PIONEERS OF ORNITHOLOGY

Professor Cao Lei wins the British Ornithologists’ Union’s Godman-Salvin Prize

The IOU congratulates Professor Cao Lei on being awarded the prestigious Godman-Salvin Prize. The British Ornithologists’ Union’s Godman Salvin Prize is awarded to ornithologists who have made an outstanding contribution to ornithology.

Professor Cao Lei has harboured a deep-seated passion for birds growing up among pigeons and domestic geese. Her passion was ignited through the observation and understanding of urban avifauna during her childhood and school. This enduring passion remains a fundamental driving force behind her remarkable success as a scientist, researcher, science communicator, and mentor. She coordinates research on the migratory paths of waterbird not only within China, but also across international boundaries in Russia, Mongolia, Japan, and Korea, spanning Far East Asia and beyond. Her research and bird monitoring initiatives have not only advanced studies in Asia but have also pushed the frontiers of ornithology and movement ecology. Notably, her efforts in establishing effective research and conservation networks across cultural divides have been truly commendable.

Cao Lei’s experiences with birds have fueled a distinguished career in ornithological research, emphasizing the study of waterbirds and wetland conservation. A graduate of Hunan Normal University (Biology, 1991) and Lanzhou University (PhD, 2005), Cao has held pivotal roles at the University of Science and Technology of China and the State Key Laboratory of Urban and Regional Ecology of the Chinese Academy of Sciences.

Her contributions began with research on the breeding biology of Red-footed Boobies (Sula sula) and rapidly expanded to include the ecology of freshwater waterbirds. This led to the advancement of census methods and critical population estimates for species along the Yangtze River Floodplain, detailed in key publications in Biological Conservation in 2008 and 2010. Her work highlighted alarming population declines, prompting further ecological and conservation-focused studies.

Cao’s work on the initiation of autecological studies of the wintering Lesser White-fronted Goose Anser erythropus at East Dongting Lake with PhD student Wang Xin, highlighted some of the nutritional and energetic challenges of being a small specialist feeding herbivore that helps explain its global rarity (Wang et al., 2013).

Embracing a flyway-based conservation strategy, she has integrated cutting-edge GPS tracking technology to elucidate migratory behaviours and identify critical habitats for several species, including the Bar-headed Goose (Anser indicus), Swan Goose (Anser cygnoides), and the Oriental Stork (Ciconia boyciana). Her collaborative research extends across borders, enhancing the understanding of migratory patterns essential for conservation efforts.

“Her passion was ignited through the observation and understanding of urban avifauna during her childhood and school.”
Professor Cao’s innovative use of large environmental datasets has furthered the exploration of how land use, climatic variations, and other macro-environmental factors influence avian migration. Her contributions to this field, including the testing of the “green wave” hypothesis, explaining the migration progress of Arctic nesting herbivores (Wang et al., 2019).

With over 100 peer-reviewed articles and numerous accolades, including the recent Godman-Salvin Prize, Professor Cao’s expertise is internationally acclaimed. She is also an IOU Fellow (see https://www.internationalornithology.org/iou-fellows).

She has been a sought-after plenary speaker at many ornithological congresses and meetings including the 26th and 27th International Ornithological Congresses (Tokyo, 2014 and Vancouver, 2018), the 20th National Congress of Ecology of China (Shanghai, 2021), and the Alfred Newton Lecture to the British Ornithologists’ Union (Warwick, 2019).

Professor Cao Lei’s commitment to ornithology not only garners her esteem within the scientific community but also ensures the continuity of her conservation legacy through the training and inspiration of the next generation of scholars.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Article and Additional References:
British Ornithologists’ Union Godman-Salvin Prize by Anthony D. Fox https://doi.org/10.1111/ibi.13255
MEMBER SPOTLIGHT

Professor Sandi Willows-Munro

Professor Sandi Willows-Munro, a native of Johannesburg, South Africa, obtained her PhD from Stellenbosch University, South Africa, under the guidance of Conrad Matthee. She conducted her postdoctoral research at the University of Texas in Austin, United States, working in the laboratories of David Hillis and David Cannatella. Presently, she leads the Conservation Genetics Lab at the University of KwaZulu-Natal in South Africa and holds the position of Associate Professor in the Department of Genetics.

With a profound interest in the African avifauna, she has had the privilege of researching the genetics of some of Africa’s most captivating birds, such as *Poicephalus* parrots and vultures. Her academic pursuits span the realms of evolutionary and molecular biology, with a particular focus on employing phylogenetic, phylogeographic, and population genetic methodologies to investigate the genetic determinants that drive evolutionary processes.

In addition to her academic roles, she currently serves as the Secretary of the International Ornithological Union (IOU) and is a distinguished member of the Zoological Society of Southern Africa and the Southern African Society for Systematic Biology. Furthermore, she contributes her expertise to the editorial boards of prominent journals including the International Journal of Avian Science (IBIS), African Zoology, and Global Ecology and Conservation.
BRIEFINGS

A Citizen Science Project Reveals Temporal Changes in Seabird Populations

A study using citizen science data from seven sites along the Portuguese coast found negative trends in the populations of several seabird species, including the Northern Gannet, Common Scooter, Sandwich Tern, Balearic Shearwater, Mediterranean Gull, and Great Skua. The study also identified sea surface temperature, easterly winds, and ocean productivity as key factors influencing seabird abundance.

Full Article: https://doi.org/10.13157/arla.71.1.2024.ra7

New Study on Collared Flycatchers Reveals Genetic Factors Influence Bird Parenting Styles

A 11-year study uncovers that the feeding rates of Collared Flycatcher parents is weakly age-dependent and heritable. This discovery opens avenues for understanding the evolution of avian parental care and age-related changes in bird provisioning.

Full Article: https://doi.org/10.1111/ibi.13307

Study Shows Urban Noise Threatens Bird Nestling Communication Development

A study on Eurasian Blue Tits reveals that nestling begging calls undergo significant acoustic changes during development, making them vulnerable to masking by urban noise. The call transition extends from soft, low-frequency tones to powerful, broadband hiss-like sounds, with two critical phases identified where anthropogenic noise could disrupt communication between parents and offspring. Researchers urge further studies on begging calls in other bird species to inform more effective noise mitigation policies.

Full Article: https://doi.org/10.1111/ibi.13299

Genomic Divergence in Sparrow Speciation Linked to Sex Chromosomes Over Mitochondrial DNA

Researchers have uncovered that the speciation of the Golden-crowned and White-crowned Sparrows, which are closely related, is primarily driven by divergence in their sex chromosomes, rather than in their mitochondrial DNA. Despite sharing similar mitochondrial genomes, possibly due to recent crossbreeding, these species exhibit significant differences in the Z chromosome and certain autosomal regions. The study, involving over 45,000 single nucleotide polymorphisms, reveals a complex pattern of nuclear genomic differentiation, highlighting the sex chromosome’s key role in the reproductive isolation of these birds. This new evidence challenges the traditional focus on mitochondrial DNA in speciation studies and underscores the importance of sex-linked genes in the evolutionary process.

Full Article: https://doi.org/10.1093/jeb/voae004

Critical Decline in African Raptors Highlights Urgent Need for Expanded Conservation Efforts

Over the last 20 to 40 years, a staggering 88% of African raptor species have been in decline, with 69% now meeting the criteria for species at risk of extinction, according to a new study. The loss of habitat to agriculture, depletion of prey, and human conflict are major threats, especially for large, slow-breeding raptors. The situation is dire in West Africa especially outside protected areas, where declines are more than twice as severe compared to within these zones. The research underscores the necessity of increasing protected land coverage to 30% by 2030, a goal set at the UN Convention on Biological Diversity COP15 and reinforces an African-led call to improve protected area management. These measures are crucial for preserving biodiversity, maintaining ecosystem health, and ensuring climate resilience.

Full Article: https://doi.org/10.1038/s41559-023-02236-0
BIRDS IN THE NEWS

UN Report...

One-Fifth of Global Avian Migrants Facing Extinction Threats

According to the United Nations first-ever State of the World’s Migratory Species report released on February 12, 2024, as part of the latest global conference of parties to the UN Convention on the Conservation of Migratory Species of Wild Animals (CMS), over 20% of the planet’s bird species that migrate are under threat of extinction due to the combined impacts of climate change and human activities. Countless birds undertake annual migrations over mountains, forests, and seas to find food and breeding grounds, and the "unsustainable" pressures on these avian migrants could lead not only to a reduction in their numbers but also to disturbances in food chains and threats to human economies, the report highlights.

Out of the 1,189 avian species included in a 1979 U.N. convention aimed at the conservation of migratory birds, 44% are experiencing population declines, with up to 22% facing the possibility of complete extinction, the report further details.

The alarming figures are based on evaluations and data from the International Union for the Conservation of Nature (IUCN) and the Living Planet Index, which tracks population trends for over 5,000 species from the 1970s to the present.
The report offers a very clear direction for what national governments must do to mitigate the risks faced by migratory birds. The key lies in implementation. Human activities are identified as the most significant threat, with practices, such as hunting, fishing, and other forms of overexploitation, affecting 70% of the listed avian species.

Habitat degradation plays a role in the decline of up to 75% of these migratory birds – highlighting the critical need for increased connectivity among fragmented ecosystems. The report’s authors call on governments to plan infrastructure projects, such as dams, pipelines, or wind farms, in a manner that avoids disturbance to habitats and migration corridors.

The impact of these pressures is exacerbated by climatic shifts, which alter migration timings, induce heat stress, and lead to more frequent and severe weather events, like droughts and wildfires.

Every three years, parties to the Convention gather to consider new species for inclusion in its protection list. The Striped Raphael Catfish (*Platydoras armatulus*), for example, is among the species being deliberated at the current meeting in Samarkand.

Additionally, the organization will introduce a new initiative aimed at providing technical support to countries for more effective habitat conservation. Conservation advocates are calling on governments to fulfill their 2022 commitment under the new global biodiversity framework to designate 30% of the world’s terrestrial and marine areas for conservation by 2030.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Report:
https://www.cms.int/en/publication/state-worlds-migratory-species

Leucism, an inherited disorder characterized by the lack of pigments in part or all of the plumage, is a phenomenon occasionally observed in birds. The first documented case of total leucism in the Magnificent Frigatebird (*Fregata magnificens*) has been reported in Venezuela. This represents the first recorded instance of leucism in this species within the country.

Given the rarity of such occurrences, long-term studies in the Neotropical region to assess the survival and breeding success of leucistic birds is essential. This will contribute to a better understanding of the implications of leucism in avian populations.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Article:

Rare Sightings

First Record of Total Leucism in the Magnificent Frigatebird (*Fregata magnificens*) in Venezuela

Leucism, an inherited disorder characterized by the lack of pigments in part or all of the plumage, is a phenomenon occasionally observed in birds. The first documented case of total leucism in the Magnificent Frigatebird (*Fregata magnificens*) has been reported in Venezuela. This represents the first recorded instance of leucism in this species within the country.

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Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Article:
In the lush riverbanks of the Amazon, there lives a peculiar avian species, the Hoatzin (Opisthocomus hoazin), a bird that seems to be stitched together from an assortment of evolutionary remnants. With a specialised digestive mechanism rare in the avian domain, the Hoatzin ferments plant matter within its foregut, mimicking the digestive processes of certain mammals and earning it the nickname ‘stinkbird.’ This unique fermentation method, similar to that in ruminants, some rodents, specific marsupials, leaf-eating monkeys, and sloths, possibly acts as a deterrent against a range of predators, including humans, due to its pungent aroma.

Communication among Hoatzins is facilitated through an array of vocalizations, including groans and hisses, which are essential for maintaining social structures. The species' younger ones exhibit an evolutionary link to their dinosaur ancestors through the presence of wing-claws, aiding mobility until they are capable of flight. This feature, reminiscent of ancient avian traits, reinforces the Hoatzin's status as a living connection to the distant past. These traits exemplify atavism, where ancestral characteristics can reemerge after eons. For example, the African Turacos, although most likely unrelated to the Hoatzin, showcase a similar primitive characteristic with their young possessing wing claws and versatile toes for gripping, signifying how ancient survival adaptations can persist and reappear in the evolutionary chronicle.

Hoatzins exhibit a cooperative breeding system where community members collectively rear the young. In the Venezuelan plains, these birds live in small groups, often including a breeding pair and several helpers. Despite the collective effort, their nesting success is relatively modest due to frequent predation. Their social structure mirrors that seen in some mammalian species, marking them as an exception among birds.

Their flight capabilities are hampered by their heavy, foregut fermentation-adapted crop, which impacts their balance and aerodynamics. With short and broad wings, the Hoatzin is more suited to flitting through the foliage than engaging in prolonged flight, which explains their territorial nature and localized existence.
The Hoatzin stands as the solitary survivor of a lineage that branched off from the rest of the avian tree about 65 million years ago. Their ancestors are found in fossil records across Europe and Africa, always near waterways, but vanished with the arrival of carnivores. The Hoatzin’s survival is becoming increasingly precarious as deforestation and environmental shifts threaten its natural habitat. While still currently prevalent, their existence is emblematic of the larger biodiversity crisis impacting the Amazon rainforest, which is losing vast swathes of land.

Vidya Padmakumar  
Editor, The IOU Flutter  
flutter@internationalornithology.org

Original Article:  

The American Ornithological Society (AOS) has initiated a shift in the naming of bird species within the Americas by announcing its intentions to eliminate all vernacular species names that were given in honor to particular individuals. This move is driven by the desire to avoid honoring historical figures associated with racism. Some birds, such as the Audubon’s shearwater and Scott’s oriole, named after the pioneer ornithologist John James Audubon and the controversial General Winfield Scott, respectively, are slated to receive alternative names that will not reference their original namesakes.

The plan is to adopt names that describe the birds’ physical attributes or environments. The importance of this initiative is to attract a broader audience to bird conservation and study.

The impetus for change has been catalyzed by the advocacy group “Bird Names for Birds”, which in 2020 petitioned for the reconsideration of such “verbal statues” alluding to the recent efforts to remove statues of confederate generals and other monuments celebrating the cause of the Southern States during the Civil War of the United States. The formation of an ad hoc committee in 2022 marked the beginning of a deliberate process, culminating in the decision to revise more than 100 bird names. The committee will consider diverse voices and seek public input to guide the renaming process. Although this decision affects only the common English names, not the Latin scientific names, many ornithologists see the change as a logical step toward enhancing the descriptive nature of bird names.
The Society plans to initiate the renaming program by first addressing about ten bird species, eventually extending the initiative throughout its naming jurisdiction in the United States, Canada, and Latin American countries. Experts anticipate a learning period but also recognize the potential for these new names to foster community engagement with birdwatching.

Not everyone is convinced of the necessity or value of such changes, and the debate over English bird names has become a divisive issue in the ornithological and birding communities. Some prominent members of the AOS have circulated a petition to take a more measured approach by considering name changes on a case-by-case basis which is supported overwhelmingly (20:1) by the North American and South American Classification Committees of the AOS. Also, many people like inoffensive eponyms that honor deserving individuals, such as Wilson’s Warbler honoring the “father” of American ornithology, Alexander Wilson [https://en.wikipedia.org/wiki/Alexander_Wilson_(ornithologist)]. Similar efforts in changing eponyms to controversial individuals in Australia, for example, were unsuccessful in that the established names continued to be used among birdwatchers. Some ornithologists point to the needed efforts and expenses in revising field guides and NGO contracts, for example. They view the eponym-changing actions as potentially detrimental to scientific integrity and advocate for resources to be directed toward more substantive educational and conservation efforts. The IOU through its Working Group Avian Checklist [https://www.internationalornithology.org/working-group-avian-checklists] is not taking a position regarding the AOS’s vernacular names at this point in time as it works only with scientific Latin names, which need to follow rules of constancy and consistency. The IOU as a global and inclusive organization envisions that different countries and regions with different traditions and languages will each decide for themselves what vernacular names to use.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Article:

Additional Articles:


“The plan is to adopt names that describe the birds’ physical attributes or environments. The importance of this initiative is to attract a broader audience to bird conservation and study.”
Michener's Paradox in Cooperative Bird Species

Michener's Group-Size Paradox suggests that altruistic groups in nature should generally be small, as it is commonly believed that the productivity per individual decreases as group size increases. However, the evidence for this decrease in per capita productivity is inconsistent and has been primarily observed in social Hymenoptera. A recent research finding indicates that per capita reproductive success declines as the group size increased across 26 cooperatively breeding bird species. The most common groups were small ones consisting of two or three individuals, and these groups showed the highest per capita reproductive success. This close correspondence between per capita reproductive success and the prevalence of different group sizes in nature suggests that it may be challenging for large groups to evolve solely through indirect fitness benefits.

In this era of boundless curiosity, the study of birds—ornithology—is not merely a scientific pursuit but an endeavor, as observers are as captivated by the lilt of a songbird’s melody as they are by the mechanics of its flight.

The study of the natural world in the past was interwoven with the threads of philosophy, arts, and emergent sciences. It was not uncommon for scientists to ponder the ethics of existence while also delving into the anatomy of a finch or the social structures of a crow. There was a harmony in this unity of knowledge—a consilience that echoed the interconnectedness of all living organisms.

The rise of the modern university and its accompanying structures, however, ushered in an age of specialization. Knowledge became partitioned, and ornithology, like other fields, has grown into a distinct discipline, shedding its broader humanistic implications in favor of a more mechanistic and empirical approach.

Yet, as with all epochal shifts, we now find ourselves at a confluence where the once disparate streams of thought begin to merge anew. The advent of artificial intelligence (AI) has prompted a re-evaluation of our relationship with the natural world and, by extension, with ornithology. The ethical considerations of AI—a creation of human ingenuity that both mirrors and transcends our cognitive capacities.

The study of birds, with their complex behaviors and social structures, challenges the presumed singularity of human intelligence, raising questions about consciousness and ethical agency. What rights, for instance, should an AI possess, and what obligations do we hold toward the natural intelligences that have evolved alongside us for millions of years?

Today’s ornithologists, equipped with AI-driven data analysis, grapple with these questions as they study the impact of human activity on bird populations and ecosystems. They find themselves not just as scientists but as stewards, their work a testament to the balance between human progress and the preservation of the natural world. The ethical use of AI in research further blurs the lines between observer and participant, as algorithmic models can predict, influence, and even embody aspects of avian behavior.
AI, in its mimicry of the mind, serves as both a tool and a mirror, reflecting human values and aspirations. Ornithology, in its partnership with AI, becomes a vessel for exploring the limits and possibilities of our own humanity. As we deploy AI to track migration patterns, to analyze the vast databases of bird song, and to monitor the health of populations, we are reminded of the inherent value in the avian life we study. The patterns of flight, the variations in plumage, and the symphonies of communication among birds are not just data points but narratives in a shared biosphere where human and avian lives are intertwined.

The ethics of AI in ornithology thus emerges as a dual concern: it is about the right use of our creations and also about right action within the natural world. As we teach machines to learn, to process, and to 'understand' in ways akin to the human mind, we must also teach them—and remind ourselves—of the value of life in all its forms. The AI algorithms that can discern the health of a bird through pattern recognition must be designed with an awareness of the ethical implications of such knowledge: to support conservation efforts, to prevent exploitation, and to promote a symbiotic relationship with the environment.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Photo: Koen Van Weel (Getty Images)

One of the Drone Bird Company's models. Photo courtesy of The Drone Bird Company
India has recently expanded its network of Ramsar sites, internationally recognized wetlands of significant value, by adding five new locations, primarily to enhance avian conservation efforts. This expansion, announced just before World Wetlands Day on February 2, elevates India's total number of Ramsar sites to 80, an increase from the previous count of 75. The Ramsar Convention, an international treaty inked in 1971, aims to protect wetlands of global importance.

Nearly eight percent of India's wetlands are currently declared Ramsar sites. The Ministry of Environment, Forests, and Climate Change declared the inclusion of these new sites on January 31. The new additions bring the cumulative area of Ramsar sites in India to 1.33 million hectares.

The newly designated Ramsar sites are the Karaivetti Bird Sanctuary and the Longwood Shola Reserve Forest in Tamil Nadu, along with the Magadi Kere Conservation Reserve, Ankasamudra Bird Conservation Reserve, and Aghanashini Estuary in Karnataka. These ecosystems, now bearing the Ramsar designation, gain international profile, which facilitates the adoption of global best practices for wetland management and opens avenues for avian conservation. Nearly eight percent of India's wetlands are recognized under the Ramsar Convention, suggesting that the conservation model applied to these sites could be extended to additional wetlands. Birds are a central focus at these sites, as the Ramsar Convention identifies criteria such as the presence of rare or unique wetland types and significance for conserving biological diversity, which often includes avian species.

For instance, Tamil Nadu's Karaivetti Bird Sanctuary, encompassing 453 hectares, is a crucial freshwater habitat for migratory waterfowl in the region, playing host to over 188 bird species, including 82 waterbird varieties. It serves as an essential breeding ground for threatened birds like the Spotted Eagle (Clanga clanga) and the Tawny Eagle (Aquila rapax). Similarly, the Longwood Shola Forest, a high-altitude wetland in the Nilgiris, is a critical watershed for 18 nearby villages and is home to several endemic bird species. It has been recognized as an Important Bird Area (IBA).
With the addition of these sites, Tamil Nadu now leads the nation with 16 Ramsar sites highlighting the state’s dedicated Wetland Mission, which focuses on wetland rejuvenation and avian species management.

Karnataka’s Aghanashini Estuary, the largest of the new Ramsar sites at 4,801 hectares, is known for its significant mangrove ecosystems, which serve as breeding and spawning grounds for various fish species. The other two sites in Karnataka, Magadi Kere and Ankasamudra Reserve, are man-made reservoirs supporting diverse flora and fauna, including a significant number of birds, with Magadi Kere being a notable wintering habitat for the Bar-headed Goose (*Anser indicus*). With these latest additions, Karnataka now has four Ramsar sites. The state government believes there are at least 10 more potential sites for Ramsar recognition.

Despite the international recognition, these wetlands continue to face challenges, such as degradation, pollution, and encroachment by humans. There is a need for concerted efforts to conserve these vital ecosystems, particularly in safeguarding the habitats of the diverse avian species that rely on them.

The significance of wetlands in supporting avian life cannot be overstated. Wetlands provide critical habitats for numerous bird species, including migratory waterfowl and endemic bird populations. These sites are essential for nesting, feeding, and resting for a wide array of birds, making their protection vital for the conservation of avian biodiversity.

The Ramsar Convention’s recognition of these wetlands as sites of international importance for conserving biological diversity underscores the crucial role, they play in supporting birdlife. This recognition not only elevates their status but also facilitates access to international best practices in wetland management, offering increased opportunities for international collaboration and funding.

The conservation of these Ramsar sites and the bird species they support encompasses local authorities’ and communities’ active engagement in wetland management and conservation efforts. The addition of these new Ramsar sites in India reflects a commitment to the conservation of wetlands and their avian inhabitants. The international recognition and support provided through the Ramsar Convention offer hope for the sustained protection and preservation of these vital ecosystems, ensuring a brighter future for the diverse bird species that depend on them.

**Dr. Murugan Shanthakumar**

Ornithologist,
The EcoDiversity Lab,
Bengaluru, India
Researchers have developed an innovative bio-logging device to capture sporadic behaviors in wild seabirds. These behaviors, such as diving for prey, are challenging to observe but crucial for advancing scientific knowledge. In the wild, especially in inhospitable settings like the open sea, documenting these actions is a formidable task, leaving much of the animals’ intricate behaviors uncharted.

Attaching video cameras to animals is an excellent observational tool. The main issue with video cameras is their significant energy consumption, which necessitates a compromise between recording duration and battery size, with the latter affecting a bird’s well-being if too large and cumbersome. The research team circumvented this dilemma by integrating low-energy sensors, like accelerometers, to identify when the seabirds perform uncommon activities, triggering the camera to record the event before shutting off again.

This bio-logger is notably the first to incorporate artificial intelligence for this purpose.

The method utilized is known as an isolation forest, which excels at identifying anomalies. However, the complexity of such artificial intelligence algorithms means they are also energy intensive. To resolve this, a lighter version of the algorithm by training a compact ‘student’ detector under the guidance of the original ‘teacher’ algorithm is equipped on the bio-logger. The resulting device weighs only 23 grams, a minor burden for the Streaked Shearwater birds it was tested on, being less than 5% of their body weight. Deployment of eighteen bio-loggers amassed over 205 hours of sensor data, leading to the capture of 76 videos, each five minutes in length.

The data from this study not only unveiled new insights into the head-shaking and foraging patterns of the birds but also represents a significant step forward in bio-logging technology. The advancement in bio-logging presented by this research promises to expand our understanding of wildlife in both human-populated and extreme environments, potentially unlocking the secrets of elusive animal behaviors from Japanese monkeys’ sweet potato washing rituals to penguins’ consumption of jellyfish.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original article:
DOI: 10.1093/pan/nxs076

Scientists fix biologger tags to animals to gain an insight into their movement and behaviour.
Vasileios Karafillidis
In the study of avian physiology, the mechanisms of thermoregulation have long been of interest. Birds, as endotherms-homoiotherms, employ a variety of appendages to manage their body temperature, with their legs, tails, ears, and bills playing crucial roles in this delicate balance.

A recent study employed infrared thermography to peer into the world of wild birds and unravel the secrets of their thermoregulatory adaptations. The study was conducted using a thermal camera and targeted species included the Australian Wood Duck (Chenonetta jubata), the Purple Swamphen (Porphyrio porphyrio), and the Suburb Fairy-Wren (Malurus cyaneus).

In cold conditions, birds lower their leg surface temperature to below that of their plumage surface, retaining heat at their core. In warm conditions, birds increase their leg surface temperature to above that of their plumage surface, expelling heat. By contrast, bill surface temperature remains approximately 2°C warmer than the plumage surface, indicating consistent heat loss under almost all conditions. Poorer physiological control of heat loss via bird bills likely entails stronger selection for shorter bills in cold climates. This could explain why bird bills show stronger latitudinal size clines than bird legs, with implications for predicting shape-shifting responses to climate change.

This ability to use their legs as a natural thermostat provides valuable insights into how birds may adapt to a warming climate. As the Earth's temperature continues to rise due to climate change, it is conceivable that birds with longer legs would have enhanced cooling capabilities, enabling them to better regulate their body temperature in hotter conditions.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Article:
Researchers have uncovered a unique method employed by parrots for maneuvering on small perches. Study trials with Rosy-faced Lovebirds (*Agapornis roseicollis*) give insights into their employment of cranial movements to navigate perches.

Previous studies have demonstrated that rosy-faced lovebirds exhibit high levels of intelligence, as evidenced by their ability to surmount diverse obstacles in pursuit of rewards, both in natural settings and in captivity. Their adeptness at ascending small tree branches and employing cranial movements to propel themselves forward when confronted with impediments has been observed.

Biomechanical assessment of a newly described beak-driven locomotor mode—‘beakiation’—by which parrots advance along the underside of narrow arboreal substrates was reported. Using high-speed videography and kinetic analyses, the limb loading patterns and pendular mechanics of beakiation, and biomechanical characteristics of this gait with other suspensory behaviours (namely, forelimb-driven brachiation and inverted quadrupedal walking in primates and sloths, respectively) studied, suggest that the parrot beak experiences comparable force magnitudes to the forelimbs of brachiating primates.

The birds employed a previously undocumented method of movement across the course. Upon reducing the dimensions of a simulated twig to a specific size, the birds experienced difficulty in maintaining a grip, rendering traversal along its length challenging. Typically, the birds would laterally maneuver using their feet. However, finding this approach unfeasible, the birds resorted to using their beaks for support.

Representative gait diagram of beakiation within parrots, accompanied by silhouettes detailing the novel gait pattern. For display purposes, the strides begin and end with a beak touchdown. Beakiation involves an alternating gait pattern in which: (i) the beak grasps the support; (ii) the two hindlimbs release synchronously, swinging the center of mass forward while pivoting about the beak; (iii) the hindlimbs re-engage at an advanced point along the substrate; and (iv) the beak assumes a new grasping position in front of the hindlimbs. Credit: Royal Society Open Science (2024). DOI: 10.1098/rsos.231397
The observed behavior entailed the bird extending its head along the length of the twig towards the intended destination. Subsequently, it grasped the twig firmly with its beak to support its entire weight, then advanced one foot forward, followed by the other, beyond the point where it was reliant on its beak for support. Repeating this process enabled the bird to gradually progress toward the desired objective and ultimately attain it.

Parrot beakiation is also characterized by longer-than-expected pendular periods, similar to observations of gibbon brachiation. However, in terms of mechanical energy recovery, beakiation is typified by lower levels of energetic recovery than brachiating specialists: a product of its slower, more careful nature.

This research sheds light on the remarkable adaptive capabilities and problem-solving aptitude of the rosy-faced lovebirds, contributing to our better understanding of avian behavior and cognitive flexibility.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Article:

Additional Articles:

“Beakiation - a newly described beak-driven locomotor mode”
The avian lineage represents the sole surviving dinosaurs following the cataclysmic asteroid impact 66 million years ago. However, not all birds of that era survived. Recent research suggests that molting patterns may have played a role in the survival of the ancestors of contemporary birds.

Feathers, fundamental to birds, are composed of keratin, akin to human fingernails and hair. They serve multiple purposes, including flight, insulation, camouflage, and mating displays. As feathers cannot be repaired, birds undergo molting, replacing old plumage with new. Molting is an essential yet often overlooked aspect of avian biology, critical to understanding avian evolution and survival.

Extant avian offspring vary in their developmental state at hatching, ranging from the naked and dependent altricial young to the feathered and independent precocial young. All undergo successive molts before achieving their definitive adult feathers. The molting process is energetically demanding, and a rapid loss of plumage can challenge the capacity for thermoregulation.

Ancient Avian Molting Patterns May Shed Light on Dinosaur Survival Post-Asteroid Event

The avian lineage represents the sole surviving dinosaurs following the cataclysmic asteroid impact 66 million years ago. However, not all birds of that era survived. Recent research suggests that molting patterns may have played a role in the survival of the ancestors of contemporary birds.

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The specimen discovered in a recent study showed feathers preserved in amber from a baby bird that lived 99 million years ago. This represents the first definitive fossil record of juvenile molting, presenting a blend of precocial and altricial traits not observed in living birds. The hatchling likely belonged to the Enantiornithines, a diverse extinct group of Cretaceous birds. The dual demands of being precocial and undergoing rapid molting may have contributed to the Enantiornithines’ extinction following the asteroid event, which led to a drop in global temperatures and resource scarcity.

A parallel study has investigated modern birds’ molting patterns to infer the evolutionary origins of the process. Typically, adult birds molt sequentially over several weeks, maintaining flight capability.

Over 600 modern bird specimens were studied in the research for signs of molting. Active molting was common in sequential molters but rare in simultaneous molters.

Though these are contemporary birds, they offer insight into the fossil record. The scarcity of fossilized birds exhibiting molting, despite its prevalence in modern specimens, suggests that ancient birds may have molted less frequently or possibly underwent simultaneous molts. Both the amber-preserved hatchling and the examination of modern bird molting patterns reveal that prehistoric birds, particularly those that did not survive the mass extinction, likely exhibited different molting behaviors than those of modern birds.

The disparities between extant birds and their extinct counterparts raise multiple hypotheses regarding the survival of certain groups. While there’s likely no single reason for the survival of crown birds—the clade encompassing all modern bird species—it’s increasingly evident that molting patterns could have been a critical factor in the resilience of avian dinosaurs.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Article:
Kiat, Y., & O’Connor, J. K. (2023). Rarity of molt evidence in early pennaraptoran dinosaurs suggests annual molt evolved later among Neornithes. Communications Biology, 6(1), 687. DOI: 10.1038/s42003-023-05048-x
The Winged Wisdom of the Arara: A Glimpse into Indigenous Ornithological Knowledge

Deep within the Big Bend of Xingu Indigenous Land, the Arara indigenous community carries centuries of ecological wisdom, evident through a recent series of thematic workshops and participatory mapping initiatives. The Arara people, spanning various ages and villages, share an impressive catalog of local birdlife.

From the echoing calls of guans and curassows to the flights of macaws, the Arara’s recognition of avian biodiversity is remarkable. Their familiarity with bird species encompasses a spectrum of ecological nuances, including morphology, feeding habits, and the melodies of birdsong that resonate through their territory. The indigenous community classifies birds based on a variety of characteristics, such as plumage, nesting behavior, and habitat preferences.

The transmission of this ornithological knowledge is seamlessly woven into their daily life, with the youth learning from the experiences and observations of their elders. Despite the richness of their traditional vocabulary, there is a noticeable decline in the use of indigenous terms for bird species, with only a modest number bearing names in Portuguese and even fewer in the Arara language.

With the common names often derived from morphological or behavioral traits, the Arara’s linguistic practices reflect a broader trend seen among indigenous cultures, such as the Xikrin people of Pará. However, this standardization of common names could signal a waning of linguistic tradition, a challenge that echoes the concerns of cultural preservationists.

Birds like the Seringueiro (*Lipaugus vociferans*) are known for their distinctive vocalizations, which serve as a beacon for their presence in the dense canopy above, where sight is often obscured.
The Arara's ornithological expertise does not stop at identification. They exhibit a deep understanding of the interplay between avian species and the Amazon Forest, noting the specific ecological niches birds occupy and the resources they utilize. The community’s insight into bird behavior, diet, and habitat is not just an academic exercise but a reflection of the symbiotic relationship they maintain with their land. For instance, the community distinguishes between fruit-eating tinamous, earthworm-eating ibis, and "ant-following" birds that capitalize on the insect disturbances caused by ant swarms. The culture of the Arara groups birds according to their common characteristics and ecological connections. This grouping is called ethnocategories, which correspond to the ecological and cultural connections presented, such as habitat, eating habits, and social behavior, sometimes in a generic way, grouping a certain number of species that have certain common characteristics, and many of these species are present in more than one ethnocategory, forming ethnospecies.

Arara’s traditional ecological knowledge of birdlife paints a vivid picture of an indigenous community living in harmony with nature, where every feather and song holds meaning. It underscores the importance of preserving such knowledge, not just for the sake of cultural heritage, but also for the invaluable insights it provides into sustainable living and biodiversity conservation. As the world seeks solutions to environmental challenges, the wisdom of the Arara reminds us that sometimes, the oldest ways of knowing can lead us to the most enlightened paths forward.

Vidya Padmakumar  
Editor, The IOU Flutter  
flutter@internationalornithology.org  

Original Article:  
psjd.icm.edu.pl/psjd/element/bwmeta1.element.psjd-5c28427a-419e-4e7a-9375-7b0b04f51164
CURRENT RESEARCH

Breakthrough...

Negros Fruit Dove: A Scientific Breakthrough in Avian Phylogenetics

The Negros Fruit Dove, *Ptilinopus arcanus* belonging to the family Columbidae has been a subject of mystery in ornithology. This fruit dove is known from a single female specimen collected from the slopes of Mount Kanlaon in the northern part of Philippines in 1953. While it was found at a high elevation, it is suspected that the species originally lived in the lowland dipterocarp forests and was driven to higher elevations by habitat destruction. While some suggest that the specimen is either a runt or a hybrid instead of a valid species, this is not widely accepted. The female Negros fruit dove was a small fruit dove with vivid dark green plumage and an ashy-grey forehead. It had a distinctive ring of bare yellow skin around its eye, and yellow fringes to some of its feathers gave it the appearance of having a yellow wing bar when perched. The throat was white, while the undertail and vent were yellow.

The original specimen was shot along with a bird suspected to be its mate from a fruiting tree. Nothing else is known about its behavior. The species has not been definitively reported since its original discovery in 1953, and as several searches of Mount Kanlaon and the surrounding forests have not discovered any sign of the species, many believe that it may be extinct. It is currently listed as Critically Endangered by the IUCN.

A recent study aimed to determine the species status and phylogenetic relationships of this enigmatic bird through the extraction and sequencing of ultra-conserved elements from historical toe-pad samples of the type specimen of *P. arcanus* and 27 other species of ptilinopine doves.

The results confirm that *P. arcanus* is a valid species and positioned at the base of the radiation of ‘core’ *Ptilinopus* fruit doves. *P. arcanus* diverged from its most recent common ancestor several million years before Negros Island emerged from the seafloor. An ancestral range reconstruction performed evaluate the effect of different altitudinal preferences on the putative historical range of this species. The implications of this study extend to the fields of conservation biology and ecological stewardship.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Article:
Genomic Insights into the Extinct Hoopoe Starling (*Fregilupus varius*)

The Hoopoe Starling (*Fregilupus varius*) is an extinct species of the Sturnidae family, endemic to Réunion Island in the Indian Ocean. The species vanished rapidly in the middle of the 19th century, primarily due to overexploitation of the landscape by humans. A recent study has provided valuable insights into the evolutionary and demographic histories of this enigmatic bird through the generation of an approximately $11\times$ coverage genome.

The high-coverage genome allowed to reconstruct the demographic history of the Hoopoe Starling and compare these results with the demographic histories of other starlings and myna species. The genomic analyses confirmed the close affinities of the Hoopoe Starling with the Asian genera *Sturnia* and *Leucopsar*, as well as the Malagasy genus *Sturnornis*, providing further support for its placement within the *Sturnidae* family. This finding aligns with previous molecular analyses, which had suggested a close relationship with these genera.

The research revealed that the Hoopoe Starling experienced a significant population bottleneck during its evolutionary history, likely due to various pressures it faced after human settlement on Réunion Island. Factors, such as competition and predation by introduced species, disease, deforestation, and hunting by humans, likely contributed to this decline. Despite this bottleneck, the effective population size of the Hoopoe Starling was not exceptionally low when compared with other extinct or critically endangered bird species.

The extinction of the Hoopoe Starling around the middle of the 19th century, approximately two centuries after the first human settlements on Réunion, underscores the impact of human activities on island ecosystems. The combination of competition and predation by introduced species, disease, deforestation, and hunting by humans likely played significant roles in the species’ rapid disappearance. The genetic insights into the history of the Hoopoe Starling sheds light on its extinction and contributes to our understanding of the broader evolutionary dynamics of the *Sturnidae* family.

Vidya Padmakumar  
Editor, The IOU Flutter  
flutter@internationalornithology.org

Original Article:  
Ancient Insights

Avian Brood Parasitism: The Indian Koel in Vedic Literature

The relationship between birds and humans has been a longstanding aspect of our shared history. In the realm of ancient ornithology, the Vedic literature of India holds a treasure trove of knowledge about the natural world, including the intriguing behavior of the Indian Koel (*Eudynamys scolopaceus*) and its habit of brood parasitism. The Vedic seers, observed and documented this behavior well before it was widely recognized in literature, providing us with a unique glimpse into the early understanding of avian brood parasitism.

The Asian Koel is a widely distributed generalist brood parasite that exploits a wide range of host species, wherein the female Koel lays its eggs in the nests of other bird species, relying on them to raise its young. This phenomenon was not only observed by the Vedic writers but was also described unambiguously in Sanskrit literature (1500-800 BC), demonstrating the deep connection between ancient culture and ornithology.

The Indian Koel is mentioned in various hymns and texts, often for its melodious call and revered as a symbol of love and longing. However, the Vedic literature goes beyond mere admiration and delves into the details of the Koel’s behavior, including its reproductive strategy of parasitizing the nests of other bird species. One of the most remarkable aspects of this ancient insight is its historical precedence. The avian behaviour of brood parasitism and the fact that their eggs resemble those of its main host, the house crow (*Corvus splendens*), have been described in Vedic literature pre-dating the writings of renowned Western naturalists, such as Aristotle and his predecessors, who began to document the European Cuckoo’s parasitic habits centuries later.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Article:

Indian Koel (*Eudynamys scolopaceus*) – Male © Renuka Vijayaraghavan
Historically, it was widely believed that birds were anosmic. This misconception had a profound impact on the study of bird communication, resulting in a relative neglect of the olfactory channel in comparison to sight and sound.

The notion that birds rely on their keen sense of sight and hearing to navigate their complex social lives has been a long-standing consensus. However, empirical research in the recent years has established that birds do indeed have fully functional olfactory bulbs and diverse sets of olfactory receptor genes and use them in various aspects of their behavior. The use of odor has recently been established as an important mode of communication, especially in influencing mate choice in the context of species identification, sex discrimination, and assessment of individual quality. For example, European Storm Petrels (Hydrobates pelagicus) use olfaction in kin recognition to avoid inbreeding while selecting an appropriate mate, whereas Black-capped Chickadees (Poecile atricapillus) and Carolina Chickadees (Poecile carolinensis) may reduce instances of hybridization by using odor cues. Olfaction has also been shown to play a role in recognition of territory and kin. Some species have been recorded to use odor cues for foraging, even cueing in on herbivore-induced plant volatiles to find insect prey. In some species, odor cues are also important for selecting nesting material.

While the existence of pheromones in birds has not been formally proven, specific avian groups, such as petrels, auks, and ducks, have been found to produce distinct scents that likely play a significant role in their social interactions.

Behavioral experiments have further confirmed that these scents can influence the behavior of fellow members of the same species. Studies on quail have shown that a lack of olfactory input can reduce the neuronal response to sexual interactions, indicating the importance of olfaction in their reproductive behavior. Odors can modulate avian behaviors, affecting neural activity and physiological mechanisms.

In mammals, the Major Histocompatibility Complex (MHC) is a critical part of the immune system, highly variable and unique to each individual, which also influences scent markers used in communication. The same complexity is found in birds, with some species demonstrating non-random mate choices based on MHC characteristics. The potential for MHC-influenced olfaction in avian mate selection mirrors findings in mammalian studies. Identifying avian pheromones is still a complex task. As with mammals, these chemical signals may consist of multiple compounds, reflecting the behavioral and physiological processes in these animals.

The original definition of pheromones, as proposed by Karlson and Lüscher (1959), appears increasingly applicable to birds. From socio-sexual behaviors in ducks to mate recognition in petrels, avian research uncovers instances of scent-mediated interactions. Although the identification of a specific avian pheromone remains a challenge, the physiological underpinnings of these behaviors suggest that avian pheromones are not mythical but real.

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

Original Article:


Novel AI Generates Synthetic Birdsong to Aid Conservation Efforts

Researchers have unveiled a groundbreaking artificial intelligence tool, ECOGEN, designed to produce realistic birdsongs. This tool aims to bolster the training of bird identification software, particularly for monitoring rare avian species. Current identification technologies work well for species with abundant recordings, but they falter when encountering rare birds or those with limited audio samples.

By integrating ECOGEN’s synthetic birdsongs into a bird sound recognition system, an average increase in classification precision of 12% was achieved. Automated systems like acoustic monitoring to track biodiversity changes are a need of the hour. The AI models employed in these systems often suffer from incomplete reference libraries. ECOGEN aims to fill this void by creating additional birdsong instances to bolster AI models, especially for species with scarce recordings due to rarity or elusive nature. This enhancement allows for an expanded sound library without necessitating further disturbance to the animals or additional field research.
ECOGEN’s contribution to conservation extends to the protection of endangered avian species by offering insights into their vocalizations, behaviors, and habitat preferences. A notable example is the potential application for the critically endangered Regent Honeyeaters (*Anthochaera phrygia*) in South-Eastern Australia, which could benefit from the synthetic songs to facilitate learning among young birds lacking adequate adult models.

The tool holds promise beyond bird conservation, with potential applications for mammals, fish, insects, and amphibians.

Another significant benefit of ECOGEN is its open-source nature, making it accessible for use on basic computing systems. The functioning of ECOGEN involves transforming actual birdsong recordings into visual sound representations called spectrograms. It then generates new images based on these spectrograms, augmenting the dataset for species with limited audio records. The newly created spectrograms are converted back into sound to enhance the training of birdsong identification systems. For this particular study, the dataset comprised 23,784 bird recordings from across the globe, covering 264 species.

**Vidya Padmakumar**  
Editor, The IOU Flutter  
flutter@internationalornithology.org

**Original Article:**  

"By integrating ECOGEN’s synthetic birdsongs into a bird sound recognition system, an average increase in classification precision of 12% was achieved"
Films / Videos

"Black Cockatoo Crisis" – A Film by Jane Hammond

Rarely, a documentary emerges with the power to both enlighten and incite a call to action among its audience. "Black Cockatoo Crisis," directed by Jane Hammond, is a prime example of such a film. It sends an alarm about the critical situation of black cockatoos in Western Australia, combining a poignant narrative with a beacon of hope for impactful change.

The documentary presents stunning visuals through Western Australia’s landscapes, capturing the essence and struggle of these majestic birds. The film’s cinematography showcases the flight, plumage, and distinct calls of the region’s three black cockatoo species, underscoring their symbolic significance to the nation.

What truly distinguishes "Black Cockatoo Crisis" is its ability to captivate and inform the balanced approach to conservation weaving together episodes of adversity and resilience, along with an appeal for immediate action.

The film extends beyond the immediate crisis to address wider issues, such as habitat destruction, the preservation of biodiversity, and the intricate relationship between humans and the environment. Throughout the narrative, Hammond creates space for contemplation, prompting viewers to ponder their own ecological footprint.

The documentary highlights the crucial influence humans have on the fate of these birds. By featuring interviews with experts, environmental activists, and local communities, the film underscores the collective effort required to safeguard the black cockatoos’ future.

"Black Cockatoo Crisis" is an essential viewing for all who are passionate about environmental stewardship, wildlife conservation, and human accountability in nature. It delivers a powerful and enduring message that will leave a lasting impression on its viewers. This documentary is a worthwhile watch.


Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org
Book Reviews

"Women in the Wild" – Celebrating the Pioneering Women Biologists of India

In an era where women's advancements are celebrated, from their integral roles in India's Chandrayaan Mission (https://en.wikipedia.org/wiki/Chandrayaan-3) to legislative efforts like the Women's Reservation Bill (https://ohrh.law.ox.ac.uk/india's-womens-reservation-bill-breaking-the-political-glass-ceiling/) and their impressive performances at the Asian Games, "Women in the Wild" casts a spotlight on the exceptional contributions of female wildlife biologists. This book, published by Juggernaut and edited by Anita Mani, details the stories of women who have navigated the challenges of remote research to protect India's natural heritage. The book features essays by esteemed environmentalists and writers, chronicling the lives of these trailblazing women.

Foremost among them is Jamal Ara, hailed as India’s pioneering female ornithologist, who was self-taught in the discipline. Raza Kazmi, author of her chapter, emphasizes Ara’s unique path, not stemming from royalty or commerce, but as an educated Muslim woman who forged her success independently. Her extensive research in the Chota Nagpur plateau, now part of Jharkhand, remains a seminal study on the region’s avifauna. Esteemed by renowned peer ornithologists Salim Ali and Zafar Futehally, Ara’s work spanned from 1949 to 1988, including over 60 scholarly and popular publications and a children’s book on birds. Despite fading from the ornithological spotlight, her legacy endures, especially in her centennial year, as celebrated in "Women in the Wild."

The book also shares the poignant tale of the ‘turtle girl’ J. Vijaya, recounted by Zia Whitaker. Vijaya’s short yet impactful life was dedicated to conserving India’s freshwater turtles, notably rediscovering the Cochin Forest cane turtle. Ayushi Jain’s conservation efforts for the endangered Cantor’s giant softshell turtle in Kerala are also highlighted, exemplifying the urgency to protect over half of the world’s freshwater turtles teetering on the brink of extinction.
Vidya Athreya emerges as a pioneer in the study of big cats through her use of radio collars, offering insights into their coexistence with human-dominated landscapes. Her findings challenge traditional wildlife management practices and demonstrate the resilience and adaptability of leopards, as evidenced by the journey of a collared leopard named Ajoba. Athreya’s work has not only elevated scientific understanding but also transformed public perception, as reflected in increased leopard populations and media representations.

Uma Ramakrishnan, a molecular ecologist and professor, delves into the secretive lives of wild animals through the genetic analysis of scat, revealing intricate details of tiger ecology and behavior. Her research has significant conservation implications, informing policies to enhance habitat connectivity and genetic diversity among India’s tiger populations, as well as explaining unique genetic traits, such as the pseudo-melanism in Odisha’s tigers.

The narrative then turns to Ghazala Shahabuddin’s eloquent study of the Himalayan oak forests, depicted with rich, poetic imagery by Neha Sinha. Shahabuddin’s work underscores the ecological significance of these forests and the potential consequences of their decline on species like the Russet-bellied Woodpecker (Melanerpes carolinus). Her efforts extend beyond research; she is actively engaged in developing bird-based ecotourism to empower the local youth of Uttarakhand.

Divya Mudappa from the Nature Conservation Foundation’s Western Ghats program is on a mission to create safer environments for threatened species like the endangered lion-tailed macaques (Macaca silenus) and giant Malabar squirrels (Ratufa indica) on the Valparai Plateau. Her innovative solutions to prevent roadkill include the implementation of rope bridges and canopy crossings, as well as collaborating with local corporations to restore native vegetation, thereby enhancing wildlife corridors.

The narrative weaves together the endeavors of women biologists across India’s diverse ecosystems, from the Eastern Himalayas with Nandini Velho and Usha Lachunga to the mid-elevation western Himalayas with Ghazala Shahabuddin, and the cool southern slopes of the Western Ghats with Divya Mudappa. These biologists share a profound bond with the landscapes and species they are dedicated to preserving. The overarching message is clear: conservation must harmonize with the needs and participation of local communities.

The book does not shy away from the gender-based challenges these women have faced, including sexism from peers, superiors, and locals. Anita Mani recounts incidents ranging from warding off men on isolated beaches to securing themselves in remote accommodations to deter unwelcome advances. Nevertheless, the perseverance and progress of these women biologists are cause for celebration, paving the way for a new generation of female field biologists committed to nature conservation.

Book Available at:
https://www.ebay.com/itm/256270937453
https://www.amazon.in/WOMEN-WILD-Brilliant-Wildlife-Biologists/dp/9353451817

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org
"Purposeful Birdwatching - Getting to Know Birds Better" by Rob Hume

In the realm of ornithological literature, few books manage to blend the personal with the practical as seamlessly as Rob Hume’s “Purposeful Birdwatching - Getting to Know Birds Better.” As an eminent figure in the birdwatching community, Hume leverages his extensive experience to guide readers through an understanding of birdwatching as a pursuit that transcends mere hobby.

Hume’s narrative, grounded in a lifetime of birdwatching experiences, offers an introspective look at the activity and its potential for emotional resonance. He posits that birdwatching is not merely a checklist activity but rather an experience that can provide deep personal satisfaction and a profound connection to the natural world. The memoir-like elements serve as a foundation upon which Hume builds his advice and advocacy, creating an argument for an engaged and mindful approach to observing birds.

The practical aspects of the book are presented through a series of methodological discussions and suggestions aimed at enhancing the birdwatcher’s experience. Hume addresses the use of equipment, the importance of detailed field notes, and the intricacies of identifying species by drawing on his own fieldwork. His advice is anchored in the belief that birdwatching should be an enriching and rewarding activity, regardless of the level of expertise.

Additionally, Hume provides an intriguing exploration of specific birdwatching challenges, such as sea watching and identifying elusive species like honey-buzzards and goshawks. Through these discussions, he underscores the importance of patience, perseverance, and a keen observational eye, encouraging birdwatchers to develop a more nuanced understanding of avian behavior and habitats.

The book is enriched by sketches and fieldnotes. While the book is an asset to beginners seeking a comprehensive introduction to birdwatching, it also offers valuable insights for seasoned birders. Hume’s contemplative approach to birdwatching will resonate with experienced individuals who will find familiarity in his recounting of personal anecdotes and reflections on the practice.

Book Available at:
https://pelagicpublishing.com/collections/new-books/products/purposeful-birdwatching

25% discount for IOU Members

Vidya Padmakumar
Editor, The IOU Flutter
flutter@internationalornithology.org

INVITING REVIEWS for the next edition:

We’re inviting book review articles for our upcoming issues. The editor reserves the right to edit submissions. Please include an email address if possible.

Address: Book Reviews to
flutter@internationalornithology.org
PODCASTS

Top Ten birding podcasts – 2024

1. American Birding Podcast
   Every other week - 30-40 minutes
   https://blog.aba.org/aba-podcast

2. Birdchick Podcast
   Every other week - about 60 minutes
   https://www.birdchick.com/

3. BirdNote Daily
   2 minutes
   https://www.birdnote.org/

4. Bird Podcast with Shoba Narayan
   Every other week - about 60 minutes
   https://birdpodcast.com/

5. Field Guides
   Monthly - about 60 minutes
   https://www.thefieldguidespodcast.com/

6. Grumpy Old Birder
   Monthly - 5 minutes
   https://grumpyoldbirder.com/media/podcasts/

7. Laura Erickson’s for The Birds
   Weekly - 5 minutes
   https://www.lauraerickson.com/radio/

8. Ray Brown’s Talkin’ Birds
   Weekly - 30 minutes
   https://www.talkinbirds.com/

9. This Birding Life
   Monthly - 30 to 60 minutes
   https://bwdmagazine.com/

10. Poultry Slam
    Every Thanksgiving - 60 minutes
    https://www.thisamericanlife.org/
## NOTICEBOARD

### CONFERENCES

#### 2024

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<td>09 - 11 April, 2024</td>
<td>BOU 2024 annual conference in Jubilee Campus, Nottingham University</td>
<td><a href="https://bou.org.uk/event/urban-birds-bou2024/">https://bou.org.uk/event/urban-birds-bou2024/</a></td>
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<tr>
<td>26 - 28 April, 2024</td>
<td>Kentucky Ornithological Society 2024 Fall Meeting, Mammoth Cave National Park</td>
<td><a href="https://www.birdky.org/kosmeetings-1-upcoming.php">https://www.birdky.org/kosmeetings-1-upcoming.php</a></td>
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<tr>
<td>2 - 5 May, 2024</td>
<td>CFO Convention 2024 Lamar, Prowers County, CO</td>
<td><a href="https://cobirds.org/conventions/">https://cobirds.org/conventions/</a></td>
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<tr>
<td>20 – 26 May, 2024</td>
<td>7th International Albatross and Petrel Conference in Ensenada, Baja California, Mexico</td>
<td><a href="https://islas.org.mx/iapc7/">https://islas.org.mx/iapc7/</a></td>
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### 2024

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<tr>
<td>11 - 16 August, 2024</td>
<td>10th Western Hemisphere Shorebird Group meeting in Mount Allison University, Sackville, New Brunswick, Canada</td>
<td><a href="https://www.whsg2024.com/">https://www.whsg2024.com/</a></td>
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<td>1 – 5 October 2024</td>
<td>Summit for the Birds, AOS Annual Meeting, YMCA of the Rockies Estes Park, Colorado</td>
<td><a href="https://meeting.americanornithology.org/">https://meeting.americanornithology.org/</a></td>
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<td>12 - 13 November, 2024</td>
<td>BOU autumn 2024 conference – Avian conservation translocations Virtual (International)</td>
<td><a href="https://bou.org.uk/event/avian-conservation-translocations-bousci24/">https://bou.org.uk/event/avian-conservation-translocations-bousci24/</a></td>
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### 2025

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<tr>
<td>31 March to 4 April, 2025</td>
<td>2025 Bird Numbers Conference EBCC in Riga, Latvia</td>
<td><a href="https://www.ebcc.info/what-we-do/conferences-and-workshops/">https://www.ebcc.info/what-we-do/conferences-and-workshops/</a></td>
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<tr>
<td>1 – 3 April, 2025</td>
<td>Frontiers in ornithology, BOU 2025 annual conference, University of Nottingham, UK</td>
<td><a href="https://bou.org.uk/event/frontiers-in-ornithology-bou2025/">https://bou.org.uk/event/frontiers-in-ornithology-bou2025/</a></td>
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<tr>
<td>August 2025</td>
<td>EOU Conference in Bangor University, Wales (UK)</td>
<td><a href="https://eounion.org/">https://eounion.org/</a></td>
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<td>14-18 October, 2025</td>
<td>2025 Annual Meeting of the Raptor Research Foundation in San Jose, Costa Rica</td>
<td><a href="https://raptorresearchfoundation.org/events/">https://raptorresearchfoundation.org/events/</a></td>
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Be Sure to Register in Time
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<td>Bird Alliance - Courses and Workshops</td>
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<td>Bird Banding Opportunities</td>
<td>Bird Banding Opportunities</td>
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<td><a href="http://www.earthquestcanada.ca/Birdcourses.htm">http://www.earthquestcanada.ca/Birdcourses.htm</a></td>
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<td>Bird Identification online course</td>
<td><a href="https://www.doc.govt.nz/get-involved/training/online-courses/bird-identification-online-course/">https://www.doc.govt.nz/get-involved/training/online-courses/bird-identification-online-course/</a></td>
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<td><a href="https://www.naturaliststudies.com/bird-language-courses">https://www.naturaliststudies.com/bird-language-courses</a></td>
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<td>Birds Canada Workshops and Webinars</td>
<td><a href="https://www.birdscanada.org/discover-birds/training-and-workshops">https://www.birdscanada.org/discover-birds/training-and-workshops</a></td>
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<td>BlackAFinSTEM - Webinars</td>
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<td>British Trust for Ornithology Workshops</td>
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<td>Field Studies Council - Courses</td>
<td><a href="https://www.field-studies-council.org/courses-and-experiences/subjects/birds-courses/">https://www.field-studies-council.org/courses-and-experiences/subjects/birds-courses/</a></td>
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<td>IBP-facilitated Beginner and Advanced banding classes</td>
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<td><a href="https://www.birdpop.org/pages/birdBandingClasses.php">https://www.birdpop.org/pages/birdBandingClasses.php</a></td>
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<td>ITEC Birding Program</td>
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<td>NABC Banding Workshop and Certification in Belize</td>
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<td><a href="https://wildresearch.ca/training/">https://wildresearch.ca/training/</a></td>
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For more information, visit https://ornithologyexchange.org/forums/forum/151-workshops-short-courses-and-other-training-opportunities/
# JOB OPPORTUNITIES

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<td><a href="https://birdercertification.org/birding-projects.php">https://birdercertification.org/birding-projects.php</a></td>
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<td><a href="https://www.birds.cornell.edu/home/jobs/#staff">https://www.birds.cornell.edu/home/jobs/#staff</a></td>
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<td>Ecological Society of America Jobs</td>
<td><a href="https://www.esacareercenter.org/">https://www.esacareercenter.org/</a></td>
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<td>Environmental Science Careers and Other Green Jobs</td>
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<td>National Wildlife Federation - Job Board</td>
<td><a href="https://www.nwf.org/Home/About-Us/Careers">https://www.nwf.org/Home/About-Us/Careers</a></td>
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<td>Natural Resources Job Board</td>
<td><a href="https://wfscjobs.tamu.edu/job-board/">https://wfscjobs.tamu.edu/job-board/</a></td>
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<td>Work Cabin - Conservation Job Board</td>
<td><a href="https://www.workcabin.ca/">https://www.workcabin.ca/</a></td>
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For more information, visit [https://ornithologyexchange.org/jobs/board/](https://ornithologyexchange.org/jobs/board/)
AAV Wild Bird Health Research Fund from the Association of Avian Veterinarians supports research projects that have a direct impact on the health and welfare of wild birds. The award amount is up to $5,000 and the application deadline is 1 February each year. https://www.aav.org/page/research

ABC Conservation Awards from the African Bird Club support small and medium-sized bird conservation projects in Africa. Applicants should normally be resident in Africa. The award amount is up to £1,500 and the application deadlines are 28 February, 30 June, and 31 October each year. https://www.africanbirdclub.org/conservation/awards

ABC Expedition Award from the African Bird Club supports expeditions that take place within continental Africa or adjacent islands, with a strong base in conservation and birds. The award amount is up to £2,000 and the application deadlines are 28 February, 30 June, and 31 October each year. https://www.africanbirdclub.org/conservation/expeditions

American Bird Conservancy’s (ABC’s) Conservation and Justice Fellowship program provides opportunities to examine and expand care for both birds and people. The paid, part-time fellowships allow individuals with a wide range of backgrounds and expertise to work closely with staff and partners on understanding how bird conservation efforts can support local communities, ensure the consideration of varied perspectives, and engage more people. https://abcbirds.org/conservation-justice-fellowships/

The Atlas Fund Scholarships are travel grants offered by the Québec Breeding Bird Atlas to experienced volunteer birdwatchers who survey remote squares in northern Québec. The amount granted for a project usually varies between $1,000 and $3,000. https://www.quebecoiseaux.org/fr/fonds-atlas

Birds Australia Research Grants from BirdLife Australia support research projects that contribute to the conservation of Australian birds and their habitats. The award amount ranges from $1,000 to $5,000 and the application deadline is 31 March each year. https://birdlife.org.au/who-we-are/our-organisation/grants

Conference attendance grants from the BOU support students and early career researchers to attend international ornithological conferences. The award amount is up to £500 and the application deadlines vary depending on the conference. https://bou.org.uk/funding/conference-attendance-grants/

Colorado Field Ornithologists Youth Scholarships provide financial help to young Colorado birders to attend summer camps, workshops, and training programs that introduce them to science and nature through the study of birds. Scholarships typically range from $200-$800. https://cobirds.org/grants-scholarships/#application-information

Craig S. Harrison Conservation Fund - to advance the conservation of seabirds by providing funds or supplies to individuals from developing countries as well as those from elsewhere working in those developing countries primarily in or bordering the Pacific Ocean. https://pacificseabirdgroup.org/grants/general-instructions/

The E. Alexander Bergstrom Memorial Research Award from the Association of Field Ornithologists (AFO) supports field studies of birds by helping to support research or analyses. The award amount is up to $2,500 and the application deadline is 15 February each year. https://afonet.org/grants-awards/bergstrom-award/

Holsworth Wildlife Research Endowment from the Ecological Society of Australia supports postgraduate students to conduct research in ecology, wildlife management, and natural history studies. The award amount is up to $7,500 and the application deadlines are 31 March and 31 August each year. https://www.ecolsoc.org.au/awards-and-prizes/holsworth-wildlife-research-endowment

The Mohamed bin Zayed Species Conservation Fund supports projects that focus on individual species conservation initiatives, recognize leaders in the field, and elevate the importance of species in the broader conservation debate. The award amount is up to $25,000 and the application deadlines are 28 February, 30 June, and 31 October each year. https://www.speciesconservation.org/grants/

Norman Wettenhall Foundation Small Environmental Grant Scheme supports groups or individuals undertaking projects that will make a positive difference to the natural living environment in Australia. The award amount is up to $10,000 and the application deadlines are quarterly. https://nwf.org.au/grants/small-environmental-grants/

The Oregon Fund for Ornithology is a grant program that supports projects related to the study, education, and conservation of birds and birding in Oregon. The fund offers up to $1,000 for each project that aligns with OBA’s mission. https://oregonbirding.org/oregon-fund-for-ornithology/
| **OSME Conservation Fund** from the Ornithological Society of the Middle East, the Caucasus, and Central Asia supports bird conservation projects in the OSME region, which includes parts of East Asia such as Mongolia, China, and Japan. The award amount is up to £2,000 and the application deadlines are 31 January and 31 July each year. [https://osme.org/grants/conservation-fund/](https://osme.org/grants/conservation-fund/)

| **Rufford Small Grants for Nature Conservation** support small nature/biodiversity conservation projects and pilot programs in developing countries. The award amount is up to £8,000 and the application deadline is continuous. [https://www.rufford.org/apply-for-grant](https://www.rufford.org/apply-for-grant)

| Each year the **Society for Northwestern Vertebrate Biology (SNVB)** provides one scholarship of up to $1000 to an undergraduate or graduate student conducting vertebrate research within the geographic scope of the society: northwestern North America west of the Great Plains and north of the Mojave Desert. SNVB is offering two $1000 scholarships now. [http://thesnvb.org/scholarship/](http://thesnvb.org/scholarship/)

| **Student Research Grant** seeks to aid student-led research in the promotion of up-and-coming scholar members of the Pacific Seabird Group. The PSG Student Research Grant typically funds at least three grants, one grant per degree level (bachelor, master, doctoral). Past grant awards were between $500 and $1000. [https://pacificseabirdgroup.org/student-research-grant/](https://pacificseabirdgroup.org/student-research-grant/)

| **Texas Ornithological Society** awards research grants each year to researchers and graduate students studying the birds of Texas. [https://www.texasbirds.org/about-tos/grants/](https://www.texasbirds.org/about-tos/grants/)

| **The Tropical Biology Association Small Grant Scheme** supports TBA alumni groups to assist them with their conservation projects and to strengthen their proficiency in natural resource management and research. They are particularly interested in innovative ideas and approaches that will lead to real outcomes. The award amount is up to £2,300 and the application deadline is 30 April each year. [https://www.tropical-biology.org/opportunities/tba-small-grants/](https://www.tropical-biology.org/opportunities/tba-small-grants/)

| **The Waterbird Society awards** grants for research in the science and conservation of waterbirds. [https://waterbirds.org/research-grants/](https://waterbirds.org/research-grants/)

| **Western Bird Banding Association** offers up to two $500-1,000 grants each year, usually one for research and the other for monitoring, for individuals and/or organizations engaged in projects in the New World using marked birds. [https://www.westernbirdbanding.org/research-grants](https://www.westernbirdbanding.org/research-grants)

| **The Wisconsin Society for Ornithology** sponsors several grants to support ornithological research by students and professionals, promote the study of birds by youth, enhance our knowledge of Wisconsin wetlands, and implement shorebird management activities. [https://wsobirds.org/what-we-do/grants](https://wsobirds.org/what-we-do/grants)

| **The Yukon Bird Club Conservation Scholarship** is an annual award of $500 for a Yukon University student who demonstrates interest and motivation in environmental conservation related to birds and their habitats. [https://yukonbirds.ca/yukon-bird-club-conservation-scholarship/](https://yukonbirds.ca/yukon-bird-club-conservation-scholarship/)

| **EDITOR’S NOTE:** This is a reasonably up-to-date database of recurring grants, awards, prizes, scholarships, fellowships, etc. in the field of ornithology. For more information, visit [https://ornithologyexchange.org/](https://ornithologyexchange.org/)
The Andersen Memorial Award for Raptor Research is given by the Raptor Research Foundation to the best student oral and poster presentations at their annual meeting. The award can only be given to a student once per degree and the student must be the senior author and presenter of the paper or poster. The poster award receives $175 and 1 year of free membership to RRF. [https://raptorresearchfoundation.org/grants-awards/andersen-memorial-award/](https://raptorresearchfoundation.org/grants-awards/andersen-memorial-award/)

The James R. Koplin Travel Award is an award given by the Raptor Research Foundation (RRF) to up to six students who are the senior authors and presenters of a paper or poster to be presented at the RRF meeting for which travel funds are requested. The award includes up to $500 and a free 1-year membership to RRF. The application deadline is the same as the abstract submission deadline for the RRF meeting. [https://raptorresearchfoundation.org/grants-awards/koplin-travel-award/](https://raptorresearchfoundation.org/grants-awards/koplin-travel-award/)

The William Brewster Memorial Award is given each year to the author or coauthors of the most meritorious body of work on birds of the Western Hemisphere published during the past ten years. [https://americanornithology.org/awards-grants/scholarships/william-brewster-memorial-award/](https://americanornithology.org/awards-grants/scholarships/william-brewster-memorial-award/)

The Loye and Alden Miller Research Award is given for lifetime achievement in ornithological research. [https://americanornithology.org/awards-grants/scholarships/loye-and-alden-miller-research-award/](https://americanornithology.org/awards-grants/scholarships/loye-and-alden-miller-research-award/)

The Elliott Coues Award recognizes outstanding and innovative contributions to ornithological research, regardless of the geographic location of the work. [https://americanornithology.org/awards-grants/scholarships/elliott-coues-award/](https://americanornithology.org/awards-grants/scholarships/elliott-coues-award/)

The Ralph W. Schreiber Conservation Award recognizes extraordinary scientific contributions to the conservation, restoration, or preservation of birds and/or their habitats. [https://americanornithology.org/awards-grants/scholarships/ralph-w-schreiber-conservation-award/](https://americanornithology.org/awards-grants/scholarships/ralph-w-schreiber-conservation-award/)

The CFO Awards are annual awards given by the Colorado Field Ornithologists (CFO) to honor individuals and organizations for their service to Colorado’s avian diversity. The awards are presented at the CFO annual convention, which will be held jointly with the Western Field Ornithologists (WFO). [https://cobirds.org/awards/](https://cobirds.org/awards/)

The Doris Heustis Speirs Award is presented annually to an individual who has made outstanding lifetime contributions to Canadian ornithology. [https://www.sco-soc.ca/doris-heustis-speirs-award](https://www.sco-soc.ca/doris-heustis-speirs-award)

The Jamie Smith Memorial Mentoring Award honors established ornithologists from academia, industry, non-government, or government agencies in recognition of excellence in mentoring a new generation of professional or amateur biologists. [https://www.sco-soc.ca/jamie-smith-memorial-mentoring-award](https://www.sco-soc.ca/jamie-smith-memorial-mentoring-award)

The Early Career Researcher Award honors fledgling ornithologists from academia, industry, and non-government or government agencies who show strong potential for future leadership in Canadian ornithology. [https://www.sco-soc.ca/early-career-researcher-award](https://www.sco-soc.ca/early-career-researcher-award)

The Taverner Awards are awarded annually to those with limited or no access to major funding, regardless of professional status, who are undertaking ornithological work in Canada. [https://www.sco-soc.ca/taverner-awards](https://www.sco-soc.ca/taverner-awards)

The Franz Haffer Award is given to an individual who has made a significant and long-term contribution to the study of Neotropical birds. The award consists of a plaque and a lifetime membership to the Neotropical Ornithological Society (NOS). [https://www.neotropicalornithology.org/franz-haffer-award/](https://www.neotropicalornithology.org/franz-haffer-award/)

The John Terborgh Award is given to an individual who has made a significant contribution to the conservation of Neotropical birds and their habitats. The award consists of a plaque and a lifetime membership to the Neotropical Ornithological Society (NOS). [https://www.neotropicalornithology.org/john-terborgh-award/](https://www.neotropicalornithology.org/john-terborgh-award/)

The Ned K. Johnson Young Investigator Award is given to an early-career researcher who has made an outstanding contribution to the study of Neotropical birds. The award consists of a plaque, a cash prize, and a one-year membership to the Neotropical Ornithological Society (NOS). [https://www.neotropicalornithology.org/ned-k-johnson-young-investigator-award/](https://www.neotropicalornithology.org/ned-k-johnson-young-investigator-award/)

The Neotropical Ornithological Society (NOS) Student Awards are given to students who present outstanding oral or poster presentations at the biennial Neotropical Ornithological Society (NOS) congress. The awards consist of certificates and cash prizes. [https://www.neotropicalornithology.org/nos-student-awards/](https://www.neotropicalornithology.org/nos-student-awards/)

The F.M. Bailey Lifetime Achievement Award is an award given by the New Mexico Ornithological Society (NMOS) to recognize individuals who have made significant lifetime contributions to New Mexico’s ornithological knowledge, the promotion of the value of birds, both aesthetic and economic, effective conservation of the state’s avifauna, and/or the NMOS. [http://www.nmbirds.org/fmbailey-award/](http://www.nmbirds.org/fmbailey-award/)
| **The Waterbird Society awards** | Individuals for outstanding contributions to waterbird science, exemplary service to the Society, and students for excellence in presentations and assistance for travel to the annual meetings. [https://waterbirds.org/awards/](https://waterbirds.org/awards/) |
| **The EOU Awards** | are awarded by the European Ornithologists’ Union (EOU) to recognize outstanding contributions to ornithology in Europe. Some of the awards are the EOU Medal, the EOU Early Career Researcher Award, the EOU Outstanding Service Award, and the EOU Student Award. [https://eounion.org/awards/](https://eounion.org/awards/) |
| **The Marsh Awards for Ornithology** | are awarded by the British Trust for Ornithology (BTO) to recognize individuals who have made significant contributions to ornithological research, conservation, or communication in the UK or abroad. Some of the awards are the Marsh Award for Ornithology, the Marsh Award for International Ornithology, the Marsh Award for Local Ornithology, and the Marsh Award for Innovative Ornithology. [https://bto.org/community/grants-and-funding/marsh-awards](https://bto.org/community/grants-and-funding/marsh-awards). |
| **The BOU Awards** | are awarded by the British Ornithologists’ Union (BOU) to support ornithological research and communication in various ways. Some of the awards are the BOU Career Development Bursary, the BOU Small Research Grants, the BOU Conference Bursaries, and the BOU Science Communication Award. [https://www.bou.org.uk/grants-and-bursaries](https://www.bou.org.uk/grants-and-bursaries). |
| **The DO-G Awards** | are awarded by the German Ornithologists’ Society (DO-G) to honor outstanding achievements in ornithology. Some of the awards are the Erwin Stresemann Prize, the Wolfgang Makatsch Medal, and the DO-G Poster Prize. [https://www.do-g.de/en/awards](https://www.do-g.de/en/awards). |
| **The NOF Awards** | are awarded by the Nordic Society Oikos (NOF) to acknowledge excellence in ornithological research and communication in Scandinavia. Some of the awards are the NOF Honorary Membership, the NOF Best Paper Award, and the NOF Best Student Presentation Award. [https://www.nordic-society-oikos.org/awards](https://www.nordic-society-oikos.org/awards). |
| **The D. L. Serventy Medal** | is awarded by the Royal Australasian Ornithologists Union (BirdLife Australia) to a person who has rendered outstanding service to ornithology in the Australasian region. [https://www.birdlife.org.au/who-we-are/our-organisation/awards-scholarships/d-l-serventy-medal](https://www.birdlife.org.au/who-we-are/our-organisation/awards-scholarships/d-l-serventy-medal). |
| **The John Hobbs Medal** | is awarded by the Royal Australasian Ornithologists Union (BirdLife Australia) to a person who has made an outstanding contribution to ornithological research in the Australasian region. [https://www.birdlife.org.au/who-we-are/our-organisation/awards-scholarships/john-hobbs-medal](https://www.birdlife.org.au/who-we-are/our-organisation/awards-scholarships/john-hobbs-medal). |
| **The W. Roy Wheeler Medallion** | is awarded by Bird Observation and Conservation Australia (BOCA) to a person who has made an outstanding contribution to ornithology in Australia. [https://www.birdlife.org.au/who-we-are/our-organisation/awards-scholarships/w-roy-wheeler-medallion](https://www.birdlife.org.au/who-we-are/our-organisation/awards-scholarships/w-roy-wheeler-medallion). |
| **The Robert Falla Memorial Award** | is awarded by the Ornithological Society of New Zealand (OSNZ) to recognize individuals or groups who have made outstanding contributions towards ornithology and conservation in New Zealand or the South Pacific region. [https://www.osnz.org.nz/robert-falla-memorial-award](https://www.osnz.org.nz/robert-falla-memorial-award). |
| **The ABC Conservation Awards** | are awarded by the African Bird Club (ABC) to support small and medium-sized conservation projects in Africa. [https://www.africanbirdclub.org/projects/conservation-fund](https://www.africanbirdclub.org/projects/conservation-fund). |
| **The ABC Expedition Award** | is awarded by the African Bird Club (ABC) to support expeditions that contribute significantly to knowledge of African birds. [https://www.africanbirdclub.org/projects/expedition-fund](https://www.africanbirdclub.org/projects/expedition-fund). |
| **The Salim Ali National Award** | for Nature Conservation is awarded by the Bombay Natural History Society (BNHS) to an individual who has made significant contributions to nature conservation in India. The award is named after Salim Ali, a renowned Indian ornithologist and naturalist. [https://bnhs.org/awards/salim-ali-national-award-for-nature-conservation/](https://bnhs.org/awards/salim-ali-national-award-for-nature-conservation/). |
| **The Salim Ali Award for Ornithology** | is awarded by the Indian National Science Academy (INSA) to an individual who has made outstanding contributions to ornithology in India. The award is also named after Salim Ali and consists of a medal and a citation. [https://www.insaindia.res.in/awards.php?award_id=18](https://www.insaindia.res.in/awards.php?award_id=18). |
| **The Yamashina Yoshimaro Award** | is awarded by the Yamashina Institute for Ornithology (YIO) to an individual who has made remarkable achievements in ornithology or related fields in Japan or abroad. The award is named after Yamashina Yoshimaro, a Japanese ornithologist and founder of YIO. [https://www.yamashina.or.jp/english/award.html](https://www.yamashina.or.jp/english/award.html). |
The Bird Conservation Nepal Award is awarded by Bird Conservation Nepal (BCN) to an individual or organization who has made significant contributions to bird conservation in Nepal. The award consists of a certificate and a cash prize. [https://www.birdlifenepal.org/page/awards](https://www.birdlifenepal.org/page/awards)

The Sri Lanka Wildlife Conservation Society Award is awarded by the Sri Lanka Wildlife Conservation Society (SLWCS) to an individual or organization who has made outstanding contributions to wildlife conservation in Sri Lanka. The award consists of a plaque and a citation. [https://www.slwcs.org/awards](https://www.slwcs.org/awards)

The Brenda and Tony Gibbs Award is aimed at funding discovery science, technological advances, high-profile conservation and research with societal impact that delivers a step change in the understanding of the movements and migrations of birds. [https://bou.org.uk/funding/brenda-and-tony-gibbs-award/](https://bou.org.uk/funding/brenda-and-tony-gibbs-award/)

**INTERNSHIPS**

Bartels Science Illustration Internship: This internship is offered by the Cornell Lab of Ornithology and involves creating illustrations of birds and other wildlife for scientific publications, exhibits, and education. The internship is open to Cornell undergraduates who would conduct the proposed project during the summer in collaboration with a Cornell Lab of Ornithology faculty or staff member. The internship duration and stipend are negotiable. [https://www.birds.cornell.edu/home/jobs/](https://www.birds.cornell.edu/home/jobs/)

Ornithology Internship: This internship is offered by the Georgia Museum of Natural History and involves working in the Ornithology Collection. The internship is open to students who are enrolled in BIOL, ECOL, or FNAR 4261 (Museum of Natural History Internship) at the University of Georgia. The internship duration and credits are negotiable. [https://gmnh.franklin.uga.edu/internship-information](https://gmnh.franklin.uga.edu/internship-information)

Wisconsin Society for Ornithology Volunteering opportunities: Seeking volunteers to help in various positions to transform into a more effective advocate for bird conservation. [https://wsobirds.org/volunteer](https://wsobirds.org/volunteer)

For more information, visit

[https://ornithologyexchange.org/funding/portal/](https://ornithologyexchange.org/funding/portal/)

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[https://intorn.wildapricot.org/](https://intorn.wildapricot.org/)
We invite articles, book reviews, suggestions, and feedback for publication in the upcoming edition of The IOU Flutter. You can contact me at the address below.

Vidya Padmakumar (She/Her) Ph.D., MRSB, P.Biol., C.Biol.,
Editor
The IOU Flutter
Official magazine of the International Ornithologists’ Union
vidyapkumar3@gmail.com
flutter@internationalornithology.org

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