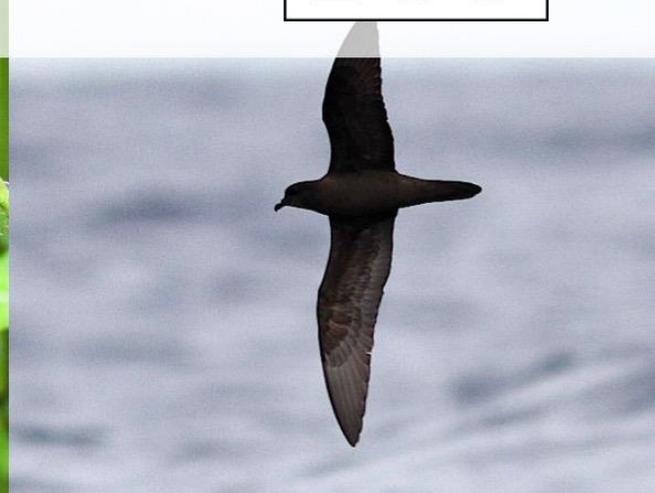
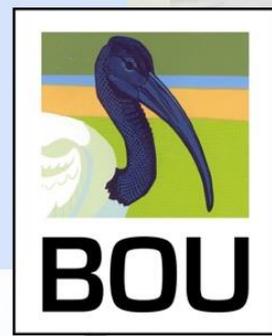
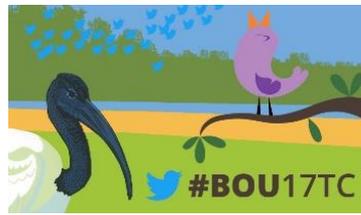




#BOU17TC





Alphabetical Lists of Abstracts

#BOU17TC

28 – 29 November 2017

Organisers: Steve Dudley @stevedudley_
Nina O'Hanlon @Nina_OHanlon



Alphabetical Lists of Abstracts

Schedule

Our rolling programme of presentations begins at UTC 1200 on 28 November and runs through to UTC 1400 on 29 November with a packed programme from ornithologists right around the world.

After the Keynotes the #BOU17TC Abstracts are in alphabetical order by presenter surname name.

For more details go to <https://www.bou.org.uk/bou17tc/programme/>

28 November

Session 1 UTC 1200 – 1530 | Presentations from Europe and Africa (1)

KEYNOTE

UTC 1200 | **Graham Appleton** @GrahamFAppleton
WaderTales, UK
International Shorebird Rescue

Moderator and Storifier | **Sjurdur Hammer** @sjurdur

Session 2 UTC 1600 – 2045 | Presentations from the Americas (1)

KEYNOTE

UTC 1600 | **Pete Marra** @PeterPMarra
Smithsonian Migratory Bird Center, US
**Studying birds in the context of the annual cycle:
Carry-over effects and seasonal interactions**

Moderators and Storifiers | **Jordan Rutter** @JERutter

Samantha Hauser @SamanthaSHauser

Session 3 UTC 2115 – 0100 | Presentations from the Americas (2)

KEYNOTE

UTC 2115 | **Caren Cooper** @CoopSciScoop
North Carolina Museum of Natural Sciences, US
**The value of birdwatchers for bird conservation: myths, limits, & frontiers of
citizen science**

Moderator and Storifier | **Amélie Roberto Charron** @ARobertoCharron



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29 November

Session 4 UTC 0130 – 0530 | Presentations from Australia, the Pacific and Asia

KEYNOTES

UTC 0130 | **Holly Jones** @DocHPJones

Northern Illinois University, US

Sentinels of the sea: Status, threats, and hope for global seabird conservation

Moderator | **Aurelie Labbe** @amtlabbe

Storifier | **Holly Kirk** @HollyKirk

UTC 0500 | **Virat Jolli** @jollivirat

Biodiversity & Environmental Sustainability (BEST), India

Conservation challenges and opportunities in the developing world: conservation of Himalayan birds through community participation

Session 5 UTC 0530 – 0730 | Ornithology is our business! Introducing #AvianAds

A whole open session for individual ornithologists, institutes, labs or any organisations working in ornithology to promote themselves, their research or fancies (jobs and degree courses) – in a single tweet!

Session 6 UTC 0800 – 1400 | Presentations from Europe and Africa (2)

KEYNOTES

UTC 0800 | **Arjun Amar** @arjundevamar

FitzPatrick Institute of African Ornithology, South Africa

Understanding the maintenance of colour polymorphism in raptors – insights from a long term study of a polymorphic African raptor

UTC 1300 | **GrrlScientist** @GrrlScientist

Science writer @Forbes @EvoInstitute @BirdNoteRadio

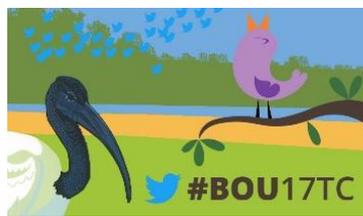
Tweeting birdie comms in the age of social media

Moderator | **Robyn Womack** @RobynJWomack

Storifier | **Alex Evans** @alexevans91

All times are given as Coordinated Universal Time (UTC) and you will have to check what this corresponds to your local time to follow presentations live.

Thanks to **Jez Smith** @PiedflyWales for help with selecting abstracts.



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KEYNOTE

International Shorebird Recue

Graham Appleton @GrahamFAppleton

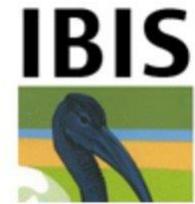
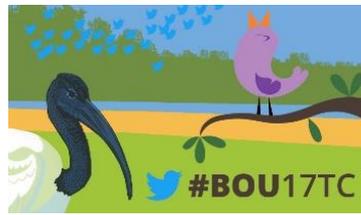
WaderTales, UK

If a Slender-billed Curlew turns up anywhere in Europe, Africa or the Arabian peninsula, a small team of shorebird experts would quickly be assembled, first to confirm identification and then to try to catch it. So much could be learned from just one bird – assuming that any Slender-billed Curlews still exist. Wader conservation is dynamic and focused and this presentation will aim to explain why this is the case. Is it because the ‘supply chain’ between data-collectors and conservation advocates is short or does the global span of wader migration encourage international cooperation?

Conservation solutions cannot be parochial because waders link countries – and continents. The culling of Welsh Oystercatchers in the 1970s might have placated cockle-gatherers in the Burry Inlet but it also upset the people of Norway. A liberal attitude to hunting in some countries is at odds with the work being undertaken elsewhere to protect declining species. Coming right up to date, the rapid development of the countries around the Yellow Sea is affecting birds that travel from Siberia and Alaska to countries as far apart as India and New Zealand.

This presentation will draw upon examples that illustrate the benefits of science-based decision-making. There will be innovative techniques, such as head-starting breeding waders, global solutions, through international treaties, and incentives that turn hunters into bird guides. At its heart will be cooperation and the International Wader Study Group.

Graham Appleton is the author of the WaderTales blog series, in which he draws upon over 40 years of shorebird experience. Some articles are generic, such as *Which wader, when and why*, which is about migration, whilst other focus on a single paper, e.g. *Why is spring migration getting earlier?*



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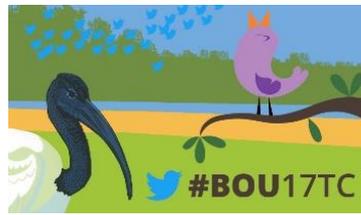
Studying birds in the context of the annual cycle: Carry-over effects and seasonal interactions

Peter P. Marra @PeterPMarra

Smithsonian Migratory Bird Center, US

Migratory birds spend different parts of the annual cycle in geographically disparate places. The conditions and selective pressures during each period are likely to affect individual performance during subsequent periods. This simple fact presents us with considerable obstacles for understanding how agents of global change (i.e., climate, land-use) will influence the ecology, evolution, and conservation of migratory birds. Such inter-seasonal effects are poorly understood within most avian migration systems, in large part because it has been difficult to follow individuals and specific populations year-round and the limiting factors and regulatory mechanisms that determine abundance remain poorly understood for most birds. Here, I will show using long-term research from throughout the annual cycle how events on wintering grounds have important consequences for breeding events and annual survival. Understanding how global change will influence migratory organisms requires the study of biological phenomena in the context of the entire annual cycle.

Pete Marra directs the Smithsonian Migratory Bird Center. His research has three broad themes, including migration, climate change, and urban ecology. Communicating his excitement for the conservation of wildlife through innovative engagement is a high priority. He is the author of two books and 200+ papers. Pete started Neighborhood Nestwatch and The Migratory Connectivity Project. He is an avid fisherman, passionate cook and father of two.



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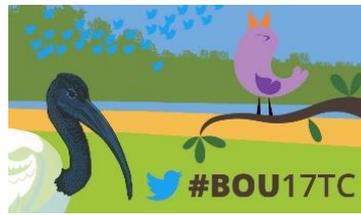
The value of birdwatchers for bird conservation: myths, limits, & frontiers of citizen science

Caren Cooper @CoopSciScoop

North Carolina State University

Birdwatchers make species checklists, monitoring nests, band/ring birds, collect specimens and artifacts, transcribe text, and other tasks that help ornithological research and conservation. Strategies that leverage citizen science for avian conservation span spatial and temporal scales, and range from the use of volunteer data to inform policy and management to the expectation that sharing observations will motivate personal conservation behaviors and collective action. I'll explore the social and ecological dimensions of citizen science, discuss myths and limits of data quality and data fitness for intended use, the skewed nature of volunteer engagement, best practices for implementing citizen science and resources for doing so, and speculate on promising frontiers in citizen science for ornithology.

Caren Cooper is an associate professor at North Carolina State University, appointed in the Chancellor's Faculty Excellence Program in Leadership in Public Science with her research lab at the North Carolina Museum of Natural Sciences. Cooper is author of *Citizen Science: How Ordinary People Are Changing the Face of Discovery*.



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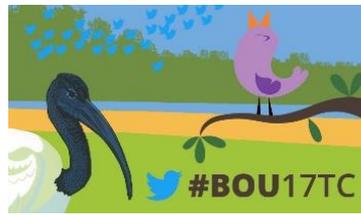
Sentinels of the sea: Status, threats, and hope for global seabird conservation

Holly Jones @DocHPJones

Northern Illinois University, US

Seabirds are globally one of the taxa most threatened with extinction, with nearly 1 in 3 species listed as threatened or worse on IUCN's RedList. Some of their largest at-sea threats include fisheries interactions, climate change, and pollution. Seabirds' on-land threats are primarily invasive species and habitat loss. This talk will briefly review seabirds' status and threats, and then focus primarily on the conservation measures that have been most successful, species that have been rediscovered, and potential solutions for the threats seabirds face. I will first talk about the important role seabirds play in both their marine and terrestrial breeding locations, and why people should care about their plight. Then, I will talk about some of their biggest threats. Regarding hopes for the future of seabird conservation, I will cover how island invasive mammal eradications have promoted recovery of seabird populations, talk about seabird restoration techniques to bolster populations, and potential ways to combat at-sea threats to seabirds. I will highlight recent work done to help promote seabird conservation and finish with potential actions people can take if they are interested in conserving seabirds.

Dr. Holly Jones is a conservation biologist working on how to best restore ecosystems and species in a changing world. She is an Assistant Professor at Northern Illinois University. She conducts field research on New Zealand islands, and has expertise on impacts of invasive mammal removal on seabird island ecosystems.



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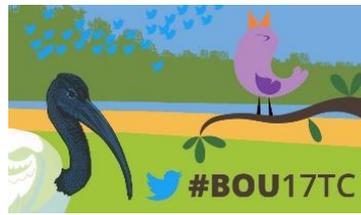
Conservation challenges and opportunities in the developing world: conservation of Himalayan birds through community participation

Virat Jolli @jollivirat

Biodiversity and Environmental Sustainability: Department of Environmental Studies, University of Delhi

Himalayas are known for its unique and rich avian species diversity. These birds provide variety of eco-services such as seed dispersal, pollination, nutrient cycling, habitat modification, insect and pest control etc. Their presence thus ensures healthy functioning of ecosystem. Considering their eco-services it is essential to protect and conserve their habitats not only in protected areas but also outside the protected area network (e.g. town and cities). Therefore an attempt has been made in Indian State, Himachal Pradesh where population of bird species are being monitored during summer season since 2015 in towns of Himachal Pradesh. A systematic bird surveys are being carried in Kullu, Mandi, Sainj, Shimla, Dharamshala, Kangra, Palampur and Chamba towns. Monitoring of bird population is providing valuable information regarding the habitat quality of these towns in term of supporting bird diversity. Apart from this sites are also identified which are rich in bird diversity. The results of the monitoring are shared with the native people through public lectures, environmental awareness competition programmes and social media. They are further engaged in monitoring common birds through short field exercises. The involvement of youth promotes their interest in nature and it will help in shaping people's perception for conservation of birds. Though it is an ambitious initiative which may not yield immediate results but an informed and environmentally sensitize citizen can bring societal changes desirable for conservation of biodiversity.

Virat Jolli is an environmental biologist with research interest in ecology and conservation of Himalayan birds. He is currently the President of Biodiversity and Environmental Sustainability and conduct programs on environmental awareness in parts of Himalayas. He is also engaged in teaching Environmental Science to undergraduate courses in University of Delhi, India.



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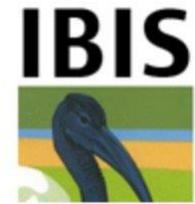
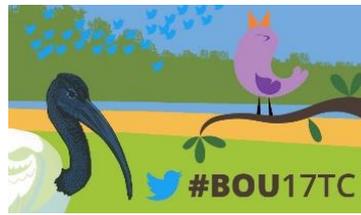
Understanding the maintenance of colour polymorphism in raptors – insights from a long term study of a polymorphic African raptor

Arjun Amar @arjundevamar

FitzPatrick Institute of African Ornithology, South Africa

Although generally rare in birds, colour polymorphism is more common for raptors species, and is particular prevalent amongst Accipiter's where around a quarter of species are polymorphic. Although colour polymorphism has fascinated evolutionary ecologists for decades the mechanisms maintaining different colour morphs within a population has remained elusive. The black sparrowhawk is the largest Accipiter in Africa and is colour polymorphic. The species colonised Cape Town in the mid-1990s and the population has been the focus of a long-term study since 2000. The species shows discrete colour polymorphism occurring as either dark and white morphs. Within South Africa the species exhibits clinal variation, with the proportion of dark morphs increasing as you move into the south-west of the country, so that in Cape Town around about 80% of the population are of the dark morph. In this presentation, I will describe the research we have conducted to test different hypotheses proposed to explain the predominance of the dark morphs within this region, and how colour polymorphism within raptors might be maintained.

Arjun Amar is an Associate Professor at the FitzPatrick Institute of African Ornithology at the University of Cape Town, South Africa. His research focuses on understanding the drivers of population declines, human-wildlife conflicts involving raptors and game birds, and more recently on understanding the evolutionary ecology of colour polymorphism in raptors.



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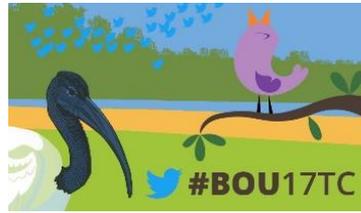
Tweeting birdie comms in the age of social media

GrrlScientist @GrrlScientist

Science writer @Forbes @EvoInstitute @BirdNoteRadio

If you've followed the BOU Twitter Conference over these past 24+ hours, you've caught a glimpse of the power and the global reach of one particular digital platform for communicating about birds and science directly with the public. Perhaps you're inspired to join the fun, or maybe you've been using just one platform and wish to expand your reach by learning how to use other platforms to diversify your audience. In this series of tweet-slides, I will share the basics for how use social media, twitter, and youtube to communicate your science to the public, and to help establish connections with your fellow scientists and with the media.

GrrlScientist is an evolutionary ecologist & ornithologist who writes long-form journalism about science for Forbes and for the Evolution Institute, and who writes 2 minute podcasts about birds for BirdNoteRadio. Science blog writer, social media lurker, Twitter fiend. Keeps songbirds. Kept by parrots.



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Using a unique bird to understand how dispersal shapes spatial patterns of genetic diversity

Stephanie M. Aguillon @s_m_aguillon

Cornell Lab of Ornithology

Isolation-by-distance is a commonly observed pattern in nature, yet to date no study has demonstrated precisely how it is generated through dispersal. We take advantage of the unique biology and long-term monitoring of the Florida Scrub-Jay to explore how isolation-by-distance patterns are created. We show how extremely limited dispersal leads to close genealogical relatives living closer together geographically. We then use dispersal and coalescent simulations to show that the expected patterns of isolation-by-distance match those that we observe empirically in the population. Thus, we gain a fairly complete understanding of how dispersal shapes spatial patterns of genetic diversity.

Negative effects of high rainfall and temperature extremes on nest success in a tropical bird

Nataly Hidalgo Aranzamendi @AranzNataly

Monash University

The sensitivity of tropical species to climate variation is not well known. We studied effects of climate means and extremes and habitat quality on nest failure and productivity in an Australian tropical bird. Using 5 years of data, we show predation caused 57% of brood losses and was more likely with extreme rainfall and hot temperatures. Nest flooding (15% of losses) was more likely with extreme rainfall. Increasing nest height as a response was only partly successful. High rainfall also reduced fledgling survival. Nest failure was frequent in lower quality habitat. Climate projections predict negative consequences for this endangered species.

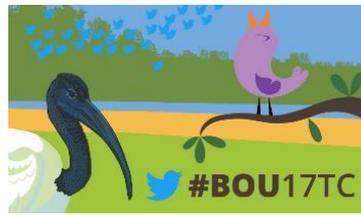
The importance of Atlantic Puffins in the diet of Great Black-backed Gulls

Sophie Bennett @bennett_sophie

Imperial College London and the Centre for Ecology and Hydrology (CEH)

Specialist predators can drive declines in prey populations, resulting in conservation conflicts where both species are protected. Great Black-backed Gulls (GBBG) predate Atlantic Puffins, but the importance of Puffins in GBBG diets and the resulting impact on Puffin populations are poorly understood. Through analysis of pellets from the Isle of May in 2017, we show that the distribution of Puffins in GBBG diet is bimodal, with evidence of individual specialism such that 5.5% of GBBGs predated 57% of Puffins. Our results demonstrate that determining extent of specialism is critical when investigating impacts on Puffins and devising effective management strategies.

Co-authors: Mark Newell (CEH), Mike Harris (CEH) and Francis Daunt (CEH)



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One nest or two? Factors affecting reproductive decisions in Greater Sage-grouse

Erik Blomberg @ejblomberg

University of Maine

Not all birds nest each year, and this process is often an under-studied aspect of species' nesting ecology. This is further hampered by imperfect detection of nests, and resulting under-estimation of nesting rates. We developed a multi-state model to evaluate rates of nesting by radio-marked Greater Sage-grouse in eastern Nevada. We found evidence for density-dependent effects on sage-grouse nesting propensity, and also that during years of drought females were less likely to attempt a second nest following loss of their first nest. Our work in this system suggest females alter reproductive allocation during poor conditions via their secondary nesting attempts.

Restoring biodiversity using fenced mammal-free sanctuaries: implications for bird communities and seed dispersal

Sara P. Bombaci @SPBombaci

Colorado State University

Many birds on islands are threatened by invasive mammal predators. In New Zealand, conservation organizations have constructed a network of 'mammal-free sanctuaries', which exclude invasive mammals with predator-proof fencing and provide opportunities to conserve native birds. We assessed the effectiveness of these sanctuaries for restoring bird communities and bird-mediated seed dispersal. We compared the density and diversity of birds, foraging rates, and the densities of bird-dispersed seeds between mammal-free sanctuaries and paired unprotected sites. We found 0.5-4.0 times higher densities of native bird species, higher bird diversity, higher foraging rates, and higher densities of bird-dispersed seeds in sanctuaries compared to unprotected sites.

Effect of geolocators on small birds: a meta-analysis

Vojtech Brlík @Vojtech_Brlík

Institute of Vertebrate Biology, Academy of Sciences of the Czech Republic

The recent advent of miniature geolocators has led to an increase in the number of studies employing these devices, especially in small species, where tags' effect is not well known. Here, I test the effect of geolocators on small birds (body mass up to 100 g) by comparing around 5 000 geocator-tagged and 13 000 control birds from more than 100 studies (over 45 % unpublished results). I found a small negative effect on return rates and body condition of tagged birds while phenology and breeding performance were not affected. It seems that aerial species are the most affected group.



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Wintering Swainson's Warblers Shift Home Ranges and Habitat Use in Response to Changes in Precipitation

Alicia Brunner @AliciaBrunner

The Ohio State University; Smithsonian Migratory Bird Center

Neo-tropical migratory birds that overwinter in the Caribbean are experiencing fluctuations in food abundance caused by shifting rainfall regimes and an overall drying trend. But, birds might have the ability to respond to these changes by shifting their seasonal home ranges to areas with habitat characteristics that promote higher food availability. I tracked Swainson's Warblers movements in Font Hill, Jamaica and identified habitat characteristics, soil moisture, and arthropod abundance in each individual's home range. Birds that demonstrate flexibility in habitat use to track shifts in prey on a seasonal scale, may have the ability to adapt to long-term environmental change.

Factors influencing fluctuating colony attendance in Caribbean Roseate Terns

Paige Byerly @paigebyerly

University of Louisiana at Lafayette

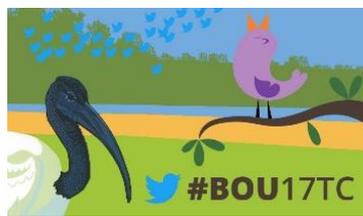
Here, we use 15 years of count data to investigate environmental factors driving fluctuating colony attendance in Caribbean Roseate Terns (ROST). Factors assessed included sea surface temperature (SST) and marine primary productivity (PP), both of which are commonly used proxies for prey availability in marine systems. We found that SST in the PRB is significantly increasing, and has a negative effect on yearly ROST colony attendance. We did not find a correlation between SST and PP, or PP and ROST nest counts. Results indicate that ROST persistence in the Caribbean may be threatened by the effects of global climate change.

Is faster spring the rule? Contrasting seasonal variation in Whimbrel migration duration to other waders

Camilo Carneiro @Camilo_Carneiro

CESAM, Dep. Biology, University of Aveiro, Portugal; South Iceland Research Centre, University of Iceland

As earlier breeding often leads to higher productivity, migratory birds may be likely to minimize migration duration in spring to a greater extent than in autumn. In fact, this seasonal difference has previously been shown for several groups, but recent evidence suggests that the Icelandic Whimbrel, a long distance migratory wader, tends to migrate faster in autumn than in spring. We investigate its case using 56 migrations from 19 individuals tracked with geolocators and compile the information currently available on migration across tracked wader species, in order to explore the variation in seasonal migration duration in this group.



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Physiological and behavioural stress of birds in urban landscapes

Izan Chalen @IzanCP

Universidad San Francisco de Quito USFQ

Animal living at urban environments have the challenge of physiological and behavioural adaptation in order to continue in those landscapes. Not all species adapt in the same way, some are displaced as urbanization increases. Corticosterone is used in several studies as an indicator of adaptation to new environments. Urban exploiters species seems to have the same levels of glucocorticoids in rural and urban environments, which reflects good adaptation, but urban avoider's species have abnormal level of glucocorticoids, reflecting poor adaptation. Some species take advantage of anthropogenic structures and human provided resources. Urban birds seems to have less efficient immunological response, making those birds vulnerable to infections and parasites. In this review work, we report direct effects of urbanization over bird's physiology, behaviour and parasitic relationships.

Estimating the population size and habitat preferences of the Sooty Shearwater in the Falkland Islands

T.J. Clark @teejclark1873

University of Glasgow

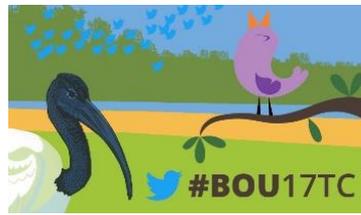
The Sooty Shearwater is declining globally, yet populations are increasing in the Falkland Islands. The reason for this trend is not well understood, and there is a lack of systematic population estimates. To address this, we gathered data on burrow density and occupancy as well as habitat variables to estimate habitat preferences and population size. Our estimates suggest that the population is growing and much larger than previously thought, providing a baseline for future population estimates. Furthermore, population growth may be a result of tussac grass re-growth, information that will be useful for guiding conservation of this species worldwide.

Local to global environments influence migrating songbirds

Emily Cohen @Emily_B_Cohen

Smithsonian Migratory Bird Center

Understanding the role of en-route threats and habitats in the demography of migratory bird populations requires information about 1) their distribution, abundance, timing and habitat affiliations, 2) the quality of habitats in areas where they occur, 3) the influence of global environmental changes, and 4) the distribution of breeding and wintering populations during migration, migratory connectivity. At the same time, technological and analytical developments are making it possible to answer many of the questions that previously limited our ability to develop conservation priorities for migrants. I will highlight projects and future research interests focused on these questions.



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DNA metabarcoding reveals diet of terns in West Africa

Edna Correia @ednarcorreia

CESAM, Faculty of Sciences University of Lisbon

Understanding trophic interactions in marine communities is key to develop ecosystem-based management approaches. We studied (using pellets and DNA metabarcoding) the diet of 7 tern species (European migrants + local breeders) in Guinea-Bissau, and of 3 pelagic predatory fishes. All species fed mostly (>77% for terns and > 41% for fishes of frequency of occurrence) on clupeids, particularly *Sardinella maderensis*. These findings suggest a wasp-waist ecosystem in the region, with *Sardinella* spp. as the key species and likely having a major role controlling the distribution and abundance of terns.

#TheTweetingBird: its rise, relevance and impact in ornithology

Steve Dudley @stevedudley_

BOU

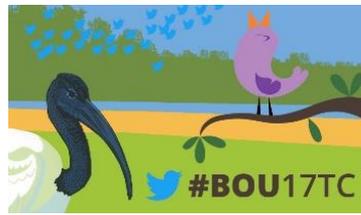
Is online attention associated with citations in the scholarly literature? The Altmetric Attention Score (AAS) quantifies the attention received by a scientific publication on various online platforms including social media. It has been advanced as a rapid way of gauging the impact of a piece of research, both in terms of potential future scholarly citations and wider online engagement. Here, we explore variation in the AAS of 2,677 research articles published in 10 ornithological journals between 2012 and 2016, analyse the contribution of the main scoring sources and track the rise of the average AAS score. For a subset of articles published in 2014 we also investigated whether the AAS influenced the citation rate of these articles.

Modelling breeding success of Piping Plovers using an environmental agent-based model

Brandon P. M. Edwards @bedwards144

University of Guelph

The Piping Plover *Charadrius melodus* is an endangered species native to North America. In Ontario, Canada, breeding piping plovers face a great deal of disturbance from humans. This is especially evident on tourist-centric beaches such as Sauble Beach in South Bruce Peninsula, Ontario. To understand the cumulative effects of these disturbances, a type of spatially explicit agent-based model was developed. The model allows for addition or subtraction of stressors to observe how piping plovers in a simulated environment react. Analysis of these results can be used to inform future management decisions and practices.



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Perceptions and impacts of ornithology games on social media

Alex Evans @alexevans91

University of Leeds

Identification-style games are an increasingly prevalent activity within the science and nature communities on social media, with ornithology-themed games proving to be especially popular. Social media provides a platform for the creation and sharing of enjoyable and educational content that attracts both researchers and the interested public. Understanding who develops and plays these games, and how they are perceived, is important in assessing their role as tools for effective science engagement. Using a mixed qualitative-quantitative survey, this project assesses the potential impact of social media identification-style games for the improvement of ornithological identification skills, social networking and scientific outreach.

Dietary plasticity of a threatened species in response to human-induced rapid environmental change (HIREC)

Betsy Evans @evanbe01

Florida Atlantic University

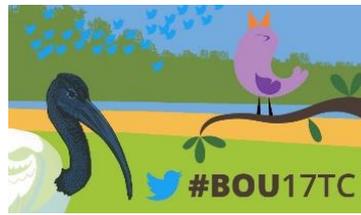
Wood Stork population declines have been attributed to HIREC. In Florida, humans have disrupted water level fluctuations in natural wetlands and created anthropogenic water bodies. To investigate stork response to HIREC, we sampled prey availability in anthropogenic and natural wetlands. To determine prey selection by storks, we compared food boluses collected from nestlings to available prey in wetlands. Storks selected prey that were more similar to exotic fishes in anthropogenic wetlands than to the smaller, native fishes in natural wetlands. Storks exhibited plasticity in foraging habitat and prey selection that may allow them to adapt to HIREC.

Local female calls elicit greater aggression than nonlocal variants in Florida Scrub-Jays

Stephen M. Ferguson @RattleCall

University of Memphis, Curtin University

Geographic variation in auditory signals is proposed as an isolating mechanism in many taxa, including birds. Historically, such research has been biased towards males. Florida Scrub-Jay *Aphelocoma coerulescens* females play a prominent role in territoriality using a geographically variable 'rattle' call. We conducted playback of local and nonlocal calls at two sites with different dominant rattle types. At each, aggression was highest toward the local variant. These results mirror patterns found in male songs and suggest an important role for female vocalizations in scrub-jays. We suggest a closer investigation of female vocalizations in other species may be revelatory.



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The motion patterns of wing-flick displays in *Phylloscopus* warblers

Kristina Fialko @kyfialko

University of Chicago

Display behaviours in aggressive interactions are vital for individuals to visually assess the quality of a competitor prior to a costly physical fight. Birds such as *Phylloscopus* warblers use territorial display behaviours with conspecifics prior to physical altercations. However, the perceptual abilities of birds and humans are distinct. For example, birds and humans differ significantly in their critical flicker fusion frequencies, meaning that our perception of rapid movements is completely different from that of a bird. Using a high-speed video camera, I quantified the wing-flick movement of several species of *Phylloscopus* to analyse the biomechanics of territorial display behaviours.

Variation in White-browed Sparrow-weaver nest insulation over a climatic gradient

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University of Pretoria

Arid regions experience hot days and cool nights, and organisms living there must cope with both extremes. Birds are typically exposed to hot daytime temperatures, but may use a nest to reduce nocturnal thermoregulatory expenses. White-browed Sparrow-weavers are a colonial southern African bird inhabiting arid and semi-arid regions, but rather than take advantage of the thermoregulatory benefits of communal roosting they roost individually in a domed nest at night. We are looking at the insulative values of their nests across a climatic gradient and predict that nest insulation values will be higher in drier areas with cooler nights.

Wading into conservation genomics for Kakī

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University of Otago, New Zealand

Conservation management of the critically endangered New Zealand endemic Kakī *Himantopus novaezelandiae* has resulted in population recovery to over 100 wild adults. When at low numbers, they have interbred with non-native Poaka *H. himantopus leucocephalus*, which can lead to genetic admixture. Previous genetic work found no significant impact of hybridisation on the Kakī genome. With high-throughput DNA sequencing, we can now assess this with greater power at a genome-wide scale. We sequenced Kakī and Poaka and assembled draft genomes to use as references to identify variant sites between species, assess impacts of hybridisation, and generate conservation outcomes.



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Informing Gulf of Mexico wide avian monitoring with structured decision making

Auriel M.V. Fournier @RallidaeRule

Mississippi State University

In the wake of the Deep Water Horizon Oil Spill in 2010 the need for large scale monitoring of birds and their habitats to better understand the population status of the 500+ species using the Gulf of Mexico throughout the year, as well as the ecological processes driving those populations and how management actions can help and hurt. We are using structured decision making to help bring measures of uncertainty, current knowledge and community values together to coordinate priorities for bird monitoring across the Gulf of Mexico system.

Migration and foraging ranges of sympatric Fork-tailed and Leach's Storm-petrels

Luke Halpin @seabirdresearch

Halpin Wildlife Research

In 2016, we used geolocators to track movements of breeding Fork-tailed *Oceanodroma furcata* and Leach's *O. leucorhoa* Storm-petrels from the Gillam Islands in British Columbia, Canada. We collected blood and feather samples for stable carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) isotope analysis and DNA sexing. Leach's storm-petrels made north/south migrations to tropical waters whereas fork-tailed storm-petrels made east/west migrations in cold North Pacific waters. Preliminary stable isotope analyses suggest differences in diet, in part reflecting different wintering ranges between the species, and possibly sexual segregation. Kernel density analysis indicated core storm-petrel foraging areas occur within an area of intense commercial shipping.

Global patterns of pet trade in monk parakeets and connections to species invasions

Elizabeth Hobson @HobsonEA

Santa Fe Institute

The global pet trade market moves thousands of animals around the world every year. Understanding this market and how trade has shifted over time can provide important insight into the invasion history of pet species. We consider patterns of global trade in Monk Parakeets. Using CITES trade data from 1981-2015, we found the extent of global trade, the countries involved, and the diversity of the global Monk Parakeet market changed over time. As existing markets closed due to changes in governmental restrictions, analysis of trade networks provides insight into how new markets are developed.



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Demographic trends and their drivers at a North Sea European shag colony over 5 decades

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Centre for Ecology and Hydrology

Environmental conditions are a key determinant of fitness in wild animals. Effects may be immediate or have downstream consequences, where conditions affect subsequent fitness ('carry-over effects'). Populations will be affected by both effects concurrently, yet few studies have quantified both simultaneously. We utilise long-term European shag *Phalacrocorax aristotelis* demographic data (1965-2016), to quantify trends and test the immediate and delayed determinants of reproduction. Productivity increased by 14% over the study, while phenology advanced by ~26 days. Crucially, we demonstrate that reproductive trends observed within this population were largely determined by carry-over effects of past reproductive effort and environmental conditions.

Symptoms of Bush Warblers' at Fukushima-daiichi (F1NPP)

Ken Ishida @chichibugera

Bush Warblers *Cettia diphone* have been captured at the most severely contaminated area of Fukushima-daiichi Nuclear Power Plant accident in March 2011. A bird with a kind of large abscess on the upper tail-coverts, was observed on 14 August, and 12 individuals with naked and black skin head in 2011, 2015 - 2017 summers. Two individuals were each consequently observed as their crisis or cure during three years. Sample size is small (n= 71), but these observations show the significant effects of ionizing radiation on the bird individuals in the wild.

Conservation of an endangered island parrot; evolutionary and morphological distinctiveness of the Seychelles Black Parrot

Dr Hazel Jackson @WildParakeetsUK

University of Kent

With 56% in decline, parrots are the most threatened of all bird groups. The Western Indian Ocean was once a rich source of parrot diversity, now just two species remain; the Mauritius parakeet, and the Seychelles Black Parrot. Despite being the Seychelles national bird, the Black Parrot *Coracopsis nigra barklyi* is one of the rarest. Restricted to the small 38km² island of Praslin, the current population is just 520-900 individuals. To provide important guidance for ongoing conservation management, this study explores the evolutionary and morphological distinctiveness of the Seychelles black parrot whilst quantifying levels of genetic diversity over time.



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Adventures in automatic data collection

Holly Kirk @HollyKirk

ICSRG, RMIT University, OxNav, Oxford University

Ornithologists often need to collect data from species which are hard to find, live in remote places or simply dislike being disturbed. Recent technological developments lead to an increase in opportunities for potentially low impact, automated data collection. Whilst this technology could revolutionise field work, there are many practical issues to address before it replaces hard graft. Here I present results gathered from deploying RFID loggers (for automatic detection of individual birds) on a breeding colony of Manx Shearwaters. I will also briefly discuss the advantages of using this methodology, and difficulties getting this tech to work in the field.

Geographic variation in the intensity of phenological mismatch between Arctic shorebirds and their invertebrate prey

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Virginia Tech

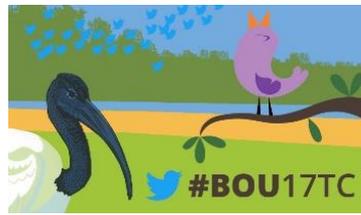
Responses to climate change can vary across trophic levels, leading to 'phenological mismatch'. We tested for geographic patterns in phenological mismatches between six Arctic-breeding shorebird species and their invertebrate prey at ten coastal Arctic sites in North America. Breeding at higher latitudes and more easterly longitudes meant greater phenological mismatch both at the individual nest and population levels. Geographic patterns in phenological mismatch were not explained by the observed patterns of long-term climatic change, but covaried with the variation in timing of snow melt and egg laying, flexibility in breeding timing, and the height of local food peaks.

No effect of age on breeding in Bridled Terns

Aurelie Labbe @amtlabbe

Murdoch University

The effect of age on the breeding performance of marine birds has been demonstrated in many species but not in bridled terns. Bridled Terns breeding in Western Australia were observed over three consecutive breeding seasons and had their breeding parameters recorded. Three different analyses found no effect of age on the breeding variables. This could be because young and inexperienced birds do not breed or that there is no effect of age on the post-laying breeding performance of Bridled Terns.



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Foraging behaviour of Northern Gannets during two distinct stages of the breeding season.

Jude Lane @heyjooode

University of Leeds

The seabird breeding season can last as long as a year for some long-lived seabirds. However, the majority of short-term high-resolution tracking studies of seabirds focus almost exclusively on the early and late chick-rearing phases of the breeding season. In 2017, for the first time, we fitted GPS loggers to adult Gannets at Bass Rock prior to egg-laying and during the chick-rearing period. We compare central-place foraging behaviour with and without the constraint of providing for offspring and establish important foraging areas at a different time of year.

Trophic niche expansion during the non-breeding season in the opportunistic Kelp Gull

Nora Lisnizer @NoraLisnizer

CESIMAR-CONICET

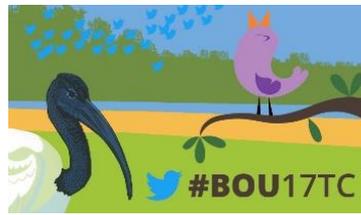
The study of the trophic ecology of birds outside the breeding season allows the understanding of predator-prey relationships, population dynamics, and interactions with human activities. Using stable isotope analysis ($\delta^{15}\text{N}$, $\delta^{13}\text{C}$) of primary feathers moulted sequentially we tested the trophic niche variation during the non-breeding period in Kelp Gulls *Larus dominicanus* from a colony in coastal Patagonia, Argentina. Isotopic niche position varied due to progressive $\delta^{15}\text{N}$ depletion and the niche spread showed a progressive expansion. Low $\delta^{13}\text{C}$ values of some feathers suggest that trophic niche expansion may be driven by the utilization of non-marine food resources by some individuals.

Incorporating behaviours into GPS tracking data - a deeper understanding of habitat selection

Emmanuel Lourie @emmanuellourie

University of East Anglia; Hebrew University of Jerusalem

GPS tracking provides information on the locations of individual animals, and by inference, the habitats they rely on. Yet, the presence vs. absence representation fails to capture the behavioural mechanisms that drive habitat choice. Here, we develop a novel method for the analysis of behaviour-specific habitat selection using data from 12 Little Bustards *Tetrax tetrax* fitted with GPS tags and accelerometer sensors. We found that taking account of behaviour revealed habitat preferences that went undetected by the conventional location-based model. Such deeper understanding of habitat choice can help guide management interventions aiming to support key functions for the species' survival.



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Reduced female survival during reproduction in a ground-nesting bird

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University of Maine

Adult survival during reproduction is an important and often overlooked contributor to the reproductive success of avian populations. We monitored female survival of Ruffed Grouse *Bonasa umbellus* during nesting and brood-rearing in central Maine, USA, and evaluated the influence of forest characteristics on female survival during these stages. We observed 71.6% and 73.0% female survival while nesting and brood-rearing, respectively, inferring that ~48% of reproductive Ruffed Grouse females were killed by predators. We provide management suggestions that may mitigate sources of mortality to Ruffed Grouse females, thereby enhancing the reproductive potential of this population.

Positive assortment by personality in Mexican Jays but not California Scrub-Jays

Kelsey McCune @kbrenmc

University of Washington

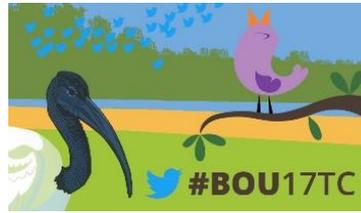
Positive assortment by personality has been shown in chimpanzee and human social networks. Theoretical simulations predict cooperation among unrelated individuals will be higher when there is positive assortment by some trait. We tested this hypothesis by measuring the boldness personality trait in wild populations of social, cooperative Mexican Jays, and asocial uncooperative California Scrub-Jays. We found evidence for group-level similarity in boldness such that Mexican Jays had significantly more similar boldness scores to group mates, whereas California Scrub-Jay boldness scores were not similar between mates. These data are the first to show positive assortment by personality related to cooperative behaviour in birds.

Warblers who wing it: Does migration strategy predict wing shape in Parulidae?

Emily McKinnon @BirdBiologist

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Flight performance imposes strong selective pressure on morphology of birds, particularly those that migrate long distances. New tracking data has revealed, surprisingly, that many songbirds use a 'long-jump' migration strategy, stopping infrequently and making long flights. This should select for wings that are efficient for long-duration flights, in contrast to birds that use a 'short-hop' strategy (frequent stops, short flights). I tested this hypothesis by measuring wingtip pointedness and relative wing length in museum specimens of 19 species of wood-warbler (*Parulidae*). Understanding the relationship between morphology and migration strategy will allow insight into the evolution of migration patterns.



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Population variance in diets of British seabirds

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University of Glasgow

Ecologists have long used niche theory to describe the ecology of a species as a whole, for instance with respect to diet. We know that in some species individuals can specialise on very specific diets even if the population as a whole is a generalist. Here I want to explore the spatial and temporal differentiation in seabird diets across the British Isles. We expect populations to be more specialised than the species as a whole and between-population differences to vary across species and to be driven by local circumstances.

Migratory route selection of the Grey-faced buzzard in the world's only oceanic flyway for raptors

Elham Nourani @elham_nourani

Nagasaki University

The East Asian oceanic flyway for raptors is the only global raptor flyway that is largely over land. We used satellite telemetry data for Grey-faced Buzzards *Butastur indicus*, a species that dominates the southern part of this flyway, to investigate the geographic and atmospheric factors responsible for the suitability of this flyway for raptor migration. Using a combination of least-cost path analysis and a step selection function, we found that the occurrence of numerous islands, as well as suitable wind support along the oceanic flyway are responsible for route selection in Grey-faced Buzzards.

Competitively mediated selection in 'great speciators'

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Trinity College Dublin

Feeding niches are defined by resources, but resource availability may depend on competition. In competing species, traits which minimise resource competition are expected to experience positive selection. This process is known as ecological character displacement (ECD). ECD typically results in a greater difference in resource-exploiting traits. Conversely, if a competitor disappears from an ecosystem, the remaining species may experience character release. Here we demonstrate competitively mediated selection in two 'great speciator' lineages of South-east Sulawesi, the *Zosterops* White-eyes and *Todiramphus* Kingfishers. 'Great speciators' evolve rapidly, making excellent study subjects. We provide empirical support for the theoretical framework of competitively-mediated selection.



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Examining the link between Black-legged Kittiwakes and Lesser Sandeels across the British Isles

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University of Strathclyde/University of Glasgow

Black-legged Kittiwakes have declined throughout the British Isles. This is thought to have been caused by a decline in Lesser Sandeels, an important prey for Kittiwakes. I evaluated the evidence for this hypothesis by reviewing studies investigating the link between Sandeel availability and Kittiwake breeding success and by examining whether Kittiwake populations mirror spatiotemporal patterns in Sandeel populations. The results suggest that the strength of the link between Kittiwakes and Sandeels varies spatially, indicating that while Kittiwake declines may have been caused by reduced Sandeel availability in some areas, other factors may be responsible in other locations and require investigation.

Ontogenetic changes in at-sea distributions of immature Short-tailed Albatrosses

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Oregon State University

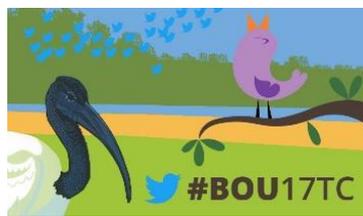
The ability of juveniles to locate distant foraging regions can rely on innate or learned information. The Short-tailed Albatross is recovering from extensive harvesting, and has recently benefited from translocation efforts. We tracked 51 fledglings for up to five years: naturally-reared chicks from Torishima and chicks translocated to Mukojima, Japan. The majority of fledglings reached the Bering Sea that first summer. Juveniles showed strong seasonal changes in distributions, traveling more in winter, and occupying regions not typically used by adults. Juvenile Short-tailed Albatrosses explored almost the entire species range, highlighting the capacity of individuals to transverse the North Pacific.

Aggression among food-hoarding birds drives competition among tree species

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Cornell Lab of Ornithology

Scatter-hoarding birds are dispersers for large-seeded trees, because they transport seeds over long distances and cache them in the ground throughout the landscape. This mutualistic interaction is highly context-dependent, as mast-seeding in such trees results in high annual variation in seed crops, which drives competition among bird species. We investigated how aggressive interactions among seed-hoarding bird species affected seed fate dynamics in a community of mast-seeding oaks in coastal California. We found that aggression by Acorn Woodpeckers, primary seed predators, drives off California Scrub-jays, who are key seed dispersers, but only when their less-preferred oaks have acorns



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What is happening to the urban House Sparrows of the Valencian Community (Eastern Spain)?

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University of Valencia (Spain)

The House Sparrow is immersed in a sharp decline in Europe. In the Valencian Community these declines are of 90 % in urban areas and of 70 % in rural ones. The aims of this project were: to discover the factors that determine its abundance, to find clues about its decline and to propose measures for its conservation. The abundance of House Sparrows was analysed, in relation to landscape variables, in 181 point counts distributed in 5 Valencian localities during 5 seasons. Urban parks were selected every season by the species, meanwhile areas with trash containers were selected in winter.

The Canary Islands cliff-nesting raptor community

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Estacion Biologica de Doñana CSIC

The specific spatial distribution is a major issue in ecology and conservation. We describe nesting sites of five cliff-nesting raptors (Egyptian Vulture [a locally extinct species], Buzzard, Osprey, kestrel, Barbary Falcon), and Raven on one of the most biodiverse hotspot within the Canary Islands (Teno, Tenerife). Raptor abundance increased with slope, shrub-covered area, and habitat diversity, and decreased with altitude, and forested and grassed areas. Threatened species occupied cliffs farther away from houses and roads, and more rugged areas than the non-threatened species. Preservation of rugged terrains and areas of low human pressure are key factors for insular raptor conservation.

Female song rate and structure predict reproductive success in a socially monogamous bird

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Massey University

Birdsong is commonly regarded as a sexually selected male trait, but recent research demonstrates female song is an ancestral and phylogenetically widespread trait. Species with female song provide opportunities to study selective pressures and mechanisms specific to female songbirds. We investigated the relationship between reproductive success and female song performance in the New Zealand Bellbird *Anthornis melanura*. Female song rate strongly predicted the number of fledged chicks. Two measures of song complexity were also good predictors of reproductive success. These results, with others, highlight the need for a change in how we view the significance of female secondary sexual traits.



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Plover lovers? Knowledge and public support for piping plover conservation by visitors to Michigan beaches

Jordan Rutter @JERutter

@AmOrnith/@SMBC

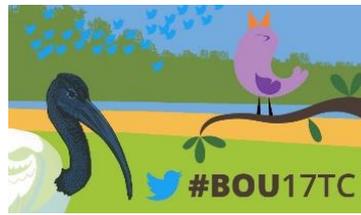
Although the Great Lakes Piping Plover population has been listed as endangered for 30 years, no formal research has examined beach-goer knowledge of piping plovers or level of public support for associated conservation and management efforts. Human opinion surveys (500) were conducted at current and recent piping plover nesting sites in Michigan during the 2016-breeding season (May-August). Results indicate that approximately half of Michigan beach-goers are familiar with piping plovers to at least some extent. The level of support for protecting beach wildlife was strong but willingness to accept restrictions was significantly weaker. Despite overall positive support for plover conservation, increased outreach and education is required to achieve recovery goals. Additionally, dog beaches should be designated at public recreation locations to provide areas where dogs and their owners do not come in conflict with plovers and other wildlife. As with any recovery effort, public support is critical for successful conservation.

'Man's best friend': A threat to shorebirds?

Jordan Rutter @JERutter

@AmOrnith/@SMBC

Dog disturbance on beaches is a well-documented threat to breeding and non-breeding shorebirds but little guidance exists to address this problem. This review synthesized previous research on the impact of dogs on shorebirds to identify effective strategies to reduce dog-related threats to this group of birds. Research demonstrates that dog disturbance is a global issue that is not biased toward specific bird-taxa, bird-age, season, or other aspects of the full annual life cycle. Studies have also investigated a diversity of disturbance categories (e.g. humans, dogs, and humans with dogs) and determined that most human activities affect shorebirds; however, any activity that additionally involves a dog is almost always a greater threat to birds. For example, research reported that dogs increase bird stress levels, lower foraging time and decrease breeding success. Strategies to reduce dog impacts to shorebirds include partial or full closure of beaches to humans, strict leash laws, and creation of 'dog parks' on or adjacent to beaches. To date, no study has developed and tested effective outreach and education programs to target dog owners on beaches and such an effort is needed to complement existing management and conservation programs. Because many shorebird species are declining at alarming rates globally, reducing threats from dogs should be a priority for most shorebird conservation efforts.



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Maternal egg hormones in the mating context: effect of pair personality

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Department of Biology, University of Turku

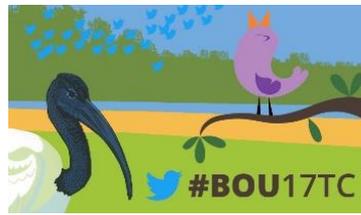
Personality traits emerge developmentally from the interaction between genetics and early environment. Maternally-derived hormones organize multiple behavioural and physiological traits. We studied whether mother's and father's personality traits, and their match, is associated with egg hormone allocation in Great Tits *Parus major*. We used multiple approaches: 1) a wild population, 2) a randomly-mated captive population, and 3) (dis)assortatively mated pairs from personality (bold/shy) selection lines. Egg androgen concentrations were associated with variation in female personality traits, and the experimental data suggested that this is independent of male personality. However, in the correlative data pairs mated assortatively for personality had lower egg androgen concentrations than disassortatively-mated pairs. Our results suggest that maternal hormones might contribute to heritability of personality, and may be sensitive to the social context of mating.

Using a novel way to communicating seabird research: Physiology and geography predict individual migratory strategies in the Brown Pelican

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Clemson University

While Brown Pelicans are resident throughout their range, some individuals undertake migrations of up to 3,000 km. Variations in migratory strategies could lead to differing risk factors and drive population dynamics. We modelled migratory strategy as a function of physiology and geography. Females and smaller males were more likely to migrate long distances; we also found a significant influence of colony size. We are examining genetic variation to help explain patterns of partial migration. In collaboration with illustrators, we will present our research as a Twitter 'graphic novel'.



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Genomic insights into the evolutionary history of the Northwestern Crow

Dave Slager @dlslager

University of Washington

The species status of Northwestern Crow *Corvus caurinus* has always been controversial. At the contact zone with American Crow *C. brachyrhynchos*, morphological similarities and behavioural plasticity have long obscured their true distributions and degree of assortative mating. Mitochondrial DNA and nuclear genomic ddRAD loci reveal a broad introgression zone along the coasts of Washington and British Columbia. The estimated mtDNA divergence time is consistent with Northwestern and American Crows evolving independently during the Pleistocene and now undergoing secondary contact. Thorough admixture along a broad introgression zone clarifies that these crows are conspecific under the biological species concept.

Senescence in the city: Do urban Black Sparrowhawks age faster?

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University of Cape Town

Productivity and survival usually decline above a certain age; a process known as senescence. Senescence is widely believed to be driven by the accumulation of somatic damage and/or mutations. Within urban environments animals are exposed to a wide range of environmental stressors that pose a major challenge to their physiological systems and might accelerate the aging process. The Black Sparrowhawk is an urban adapter species in Cape Town, South Africa, with a relative long life-span. We used 16 years of breeding records from individually colour ringed birds to explore reproductive senescence and actuary senescence (survival) across a gradient of urbanisation.

Bird and bat species' vulnerability to collision mortality at wind farms: a global trait-based assessment

Chris thaxter @thaxalot

BTO

Mitigation of anthropogenic climate change involves deployments of wind farms, posing a collision risk to birds and bats. Potential effects for many species and locations, however, remain unclear. We related collision rates/turbine to species traits and turbine characteristics to predict potential vulnerability of species globally. Avian collision rate was affected by migration, dispersal and habitat, and bats by dispersal. Larger turbines (megawatts) increased collision rates, but fewer larger turbines reduced total wind farm collisions per unit energy output. Areas containing vulnerable species concentrations included migration corridors. These results can help guide wind farm design and location to minimise animal mortality.



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Birds as biondicators of flame retardant emissions from landfill

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University of Birmingham

Certain flame retardants (FRs) have been shown to bioaccumulate in organisms, biomagnifying at elevated trophic levels. Such compounds are subject to long-range transport and are persistent. Some of the worst-offending such chemicals are now banned or restricted in many jurisdictions. Municipal solid waste landfill may represent a reservoir of such chemicals since the goods they were applied to have become obsolete. Landfill is an important foraging resource for various gull *Larus* species, among other bird groups. Utilising analytical chemistry and behavioural research, we aim to test the hypothesis that landfill-foraging gulls constitute effective bioindicators of FR emissions from landfill.

Management scenarios for Bicknell's Thrush recovery in a climate-change context

Junior A. Tremblay @Tremblay_Jun

Environment and Climate Change Canada

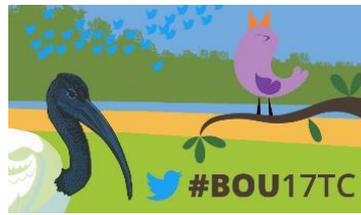
Climate change-driven range shifts are projected to be most dramatic at northern latitudes because of greater projected increases in temperature, such as in Canadian boreal forests. Bicknell's Thrush *Catharus Bicknelli* is a migratory bird whose range is one of the most restricted in Northeastern North America, and is classified as threatened under the Species at Risk Act in Canada. Bioclimatic models project a loss of more than 50% of the species habitat in Northeastern U.S. over the next 30 years. We modelled the impacts of several forest management and conservation scenarios, natural (i.e. wildfires and insect outbreaks) disturbances as well as climate-induced changes on tree species growth and reproduction on forest landscape structure in Bicknell's Thrush breeding range of eastern Canada. Our results offer benchmarks for considering effective long-term conservation of critical habitat in a changing world.

Using automated bioacoustic methods to improve the monitoring of Australian parrots

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University of Melbourne, Museums Victoria

Automated recording units (ARUs) provide excellent opportunities to collect large volumes of data across geographic space to monitor a species, and through time to infer population trends. Automating the process of identifying a species of interest within recordings can turn processing ARU data into a manageable task. Many algorithms exist to create species specific automated identification, I've tested 3 of these algorithms (Hidden Markov Models, Spectrogram Cross Correlation, and Binary Point Matching) on Australian parrots. Parrots are an order that is diverse in vocalisation type, conservation status, and population trends, lending themselves to determining which algorithm is best for different species and questions.



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Females who sing are more colourful

Wesley Webb @wesleythewebb

Massey University

Elaborate plumages and songs are common amongst not only male birds, but females too. What is the relationship between female song and plumage colour elaboration across the songbirds? Is there an evolutionary trade-off, or do these traits evolve in concert? We test this with a phylogenetically-informed comparative analysis, using published data on female song for 1023 species of songbirds and a novel approach that enables rigorous comparison of colour elaboration. We show that in species where females sing, females (but not males) are on average more colourful, suggesting concerted evolution and reinforcing functions of female song and colour elaboration.

Genes around the clock: Circadian rhythms of clock and immune gene expression in Great Tits

Robyn Womack @RobynJWomack

University of Glasgow

The circadian clock is a core feature of avian physiology, vital for the normal function of many biological processes. Central avian clock mechanisms are synchronised with daily fluctuations in the external environment, such as the light-dark cycle, and in turn influence timing of behavioural activity and physiological changes that occur across a 24 hour day. We use gene expression as a tool for investigating circadian mechanisms in free-living Great Tits, with the overall aim of creating time profiles of gene expression of core clock and immune genes to untangle the complex interactions of avian circadian physiology with the environment.

Impacts of the invasive mute swan to the coastal wetlands of the Great Lakes

Nicole J. Wood @WildlifeBioGal

Central Michigan University

Mute Swans are an invasive species to North America. The population of Mute Swans has exploded in the Great Lakes Basin. The impacts of the mute swans on the ecology of the Great Lakes coastal wetlands was documented across trophic levels. Researchers looked at fish, invertebrate, and submerged aquatic vegetation populations, as well as the water quality of the wetlands in various coastal wetlands. These impacts are discussed to help fully assess the damage invasive Mute Swans are having in the Great Lakes.