

# Abstracts

## 2nd European Meeting of Young Ornithologists



## **Birds over the fence: Investigating local garden bird movements along the urbanisation gradient**

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Gardens constitute a large proportion of the green space in built-up areas and probably hold a disproportionate fraction of urban biodiversity. However, they are rarely considered in large-scale population studies and their role in a wider landscape context is largely unknown. Within gardens supplementary bird feeding as practiced in the UK and other countries has enormous potential to impact bird populations. As around 50% of all UK households provide food for birds it constitutes an enormous potential energy resource in our urban environments. Because individual birds can be highly mobile, garden feeding may therefore support birds from the wider countryside around towns and cities or, conversely, gardens may rely on the wider countryside to provide birds drawn in to feed. Determining how feeding in gardens and garden habitats influences populations in local woodland or farmland or vice versa or if the populations are largely independent is therefore important to understanding the wider effects of urbanisation. Patterns of movements of individuals across the urban-rural boundary therefore need to be investigated. Working with Citizen Scientists and using colour ringing combined with bird surveys, the BTO carried out pilot work to investigate this in around Birmingham, a major UK city during 2018. The results from this pilot work are presented here along with future plans for the research project.

# **Assessing the contribution of road traffic to declines in British bird populations**

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In the last forty years many common bird species have suffered severe declines across Great Britain, thought to be largely a result of agricultural intensification. However, there is also a strong correlation between these declines and increases in road traffic levels. Many studies have identified negative effects of roads on birds, via mechanisms such as avoidance of noise and light pollution and mortality from collisions, yet, to date, no island-wide quantification of impacts on populations has been attempted for Great Britain.

This research is using a series of models to estimate the proportion of bird population declines over the last forty years that have been caused by increased traffic flow in Britain, while controlling for other factors. In addition, it will identify species that are especially sensitive to roads and estimate the impact of planned new roads and future changes in traffic levels. The results of this will allow better planning and mitigation of the road network in Great Britain and other countries with dense road networks, and contribute to existing and planned conservation projects that are situated near to roads.

Here, preliminary results of two analyses will be presented. The first investigates the impact of road disturbance on detection of birds in surveys while the second analyses the spatial variation in bird population densities across Great Britain in relation to the distribution of roads and their traffic flows.

## **How do continental Common Terns (*Sterna hirundo*) live with deteriorating rivers?**

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Common Terns in Croatia have two distinct populations: one maritime, breeding on the numerous islets along the Adriatic coast, and another continental, breeding on gravel drifts of the rivers Sava and Drava. While the marine islets provide relatively stable breeding grounds, the rivers are highly regulated by dams and other types of hydromodification. As a result, natural breeding colonies are today very few and inconsistent. Terns have therefore taken to breeding on artificial islands of the surrounding lakes and gravel pits. As part of the Interreg Si-Hr ČIGRA project, we equipped 17 Common Terns on colonies near Zagreb with GPS-UHF loggers in order to determine their habitat use during the breeding season as well as the level of communication between different colonies. The preliminary results showed that the birds predominantly forage along the shallower parts of the river Sava within the borders of Zagreb county and rarely wander further than 30 km from the colony. The year 2018 has seen exceptionally high water levels, with their traditional colony submerged until mid-June. The terns have thus had to spend extra time prospecting for new breeding sites. They took to breeding on abandoned machinery used for gravel extraction. They have also readily accepted a newly-constructed breeding platform, with the first egg being laid just 5 days after platform deployment. The GPS-UHF loggers will continue to collect data during their migration and wintering, to be downloaded upon return to Europe.

## **A cross-continental analysis of the habitat requirements for stable Black-tailed Godwit populations**

Miguel Monteiro

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The Black-tailed godwit is a grassland breeding wading bird. In 2006, its status on the IUCN Red List of Threatened Species was changed from 'Least Concern' to 'Near Threatened'. Conservation actions and plans have been put into practice in recent years in order to halt the species' current decline and the contraction of its European distribution.

In North-western Europe, the breeding population of the Black-tailed godwit is concentrated in the Netherlands and bordering parts of neighbouring countries and most of the species' scientific knowledge comes from this population. In the other hand, in the Central and Eastern European populations very little information exists about behaviour, ecology, population dynamics and migratory pathways. In countries such as Estonia, Finland or Belarus the black-tailed godwits use meadows and pastures but also breed in more natural habitats such as bogs, mires or river flood plains, a very contrasting reality comparing to the agriculture landscape that the North-western population selects to breed.

Therefore, a single and identical conservation plan is unfeasible to apply in all the countries where this endangered species breeds. My PhD aims to study several ecological traits (such as migratory behaviour or nest and chick survival) in relation to specific habitat characteristics and requirements of the species with special focus in the east-European populations, in order for an efficient and cross-continental conservation plan.

## **The lesser kestrel (*Falco naumanni*) in the Po Plain: distribution, status assessment and habitat selection of the European northernmost breeding population**

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The lesser kestrel was a formerly widespread raptor in Mediterranean region and central-eastern Europe. After a dramatic population decline and range contraction in the second half of 20<sup>th</sup> century, the European population has progressively recovered, spreading northward in western Europe, possibly supported by active conservation actions and by favourable climatic conditions in both breeding and wintering areas. The Po Plain breeding population currently represents the forefront of this northward expansion. We present data regarding population size, distribution and conservation status in the Po Plain (provinces of PR-MN-MO-BO-FE) since the first confirmed breeding attempt (year 2000). Current population size is estimated at 63-87 breeding pairs, but a systematic survey is lacking. We also present an exploratory analysis of breeding and foraging habitat selection obtained from observations associated to field-based mapping of land use and habitats surrounding breeding colonies, carried out during summer 2018. Lesser kestrels appeared to positively select areas with wide extensions of alfalfa, barley and wheat, while avoiding those with prevalence of maize to establish their breeding colonies. Foraging attempts were observed in a wide variety of field types but with a clear preference for alfalfa, though small vegetation height was preferred in any field type. Our findings suggest that increasing the extent of alfalfa cultivation may be a valuable conservation strategy to foster the Po Plain population of lesser kestrels. These preliminary findings will serve as a basis for the conservation actions envisaged in the LIFE FALKON project (LIFE17 NAT/IT/000586, years 2018-2022) that are planned to start in spring 2019.

## **Environmental effects on the biology and ecology of a *farmland bird*: A case of study on Barn Swallow (*Hirundo rustica*)**

Camila Paola Grigolo

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In the last decades, several farmland bird populations have suffered sharp declines, which occurred concurrently to the spread of modern intensive agricultural practices. Strong use of fertilizers and agrochemicals, monoculture extension and more intensive mowing of grasslands strongly reduced biodiversity in agro-ecosystems. Their effects are particularly adverse to insects and, consequently, to insectivorous birds. In the context of agroecosystems conservation, I'm interested in analysing the effects of habitat features on the biology and ecology of organisms. In a preliminary study conducted in the area of Parco Adda Sud (northern Italy), I observed that diet composition of Barn Swallow (*Hirundo rustica*) nestlings varied significantly with environmental heterogeneity around breeding sites, that nestling antioxidant capacity varied with diet diversity and, finally, that nestling antioxidant capacity increased with environmental heterogeneity. Therefore, this study suggests that land use may affect nestling quality in a model specie typical of rural habitats, that is also declining at continental scale. These results motived us to further investigate how environment, and particularly land use around breeding sites, can affect biological features of our model organism. Since our results suggest that antioxidant capacity varies with the environment, and it's known that it affects many physiological features of an individual, in the last field season I collected data to relate land use and eggshell pigmentation, telomere development, which are known to vary with antioxidant capacity, and cloacal microbiome, which is possibly related also to diet. Hopefully, these studies will disclose further relationships between environmental features and individual quality.

## **The impact of modern dairy farming on meadow birds: a case study in the Italian Alps**

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Permanent grasslands decreased by 6.4% in the EU between 1993 and 2011, due to conversion to other land-uses or abandonment. The remaining grasslands have been subject to marked intensification with severe impacts on biodiversity harboured in formerly low-intensity semi-natural grasslands.

We investigated the effect of the modernisation of the dairy farming system on bird communities along gradients of hay meadow intensification in Trentino (NE Italy). During spring 2017 we surveyed birds and collected variables related to landcover, landscape structural traits, hay meadow intensification, mowing regime and topography at 63 landscapes units.

We evaluated the effect of these variables on community composition, species richness, and richness of meadow specialist species by mean of RDAs and GLMs and accounting for the spatial structure of our design.

Species richness was positively affected by wood cover, length of tree lines and woody hedgerows, altitude and slope, and negatively by the meadow intensification. Community composition was influenced by the cover of meadows recently converted into crops, woods, traditional orchards, length of hedgerows, number of shrubs, slope and altitude. Meadow specialists were negatively impacted by meadow surface reduction and by the percentage cover of meadows mown before the fourth week of June, and positively by altitude.

We showed how multiple environmental and management traits of hay meadows affect an animal group found at the top of the trophic web within this environment; conservation implications derived from bird ecology in meadows could inform adequate conservation actions to halt further biodiversity depletion in Alpine grassland.



# **Landscape scale and parcel scale habitat preferences of wintering, migrant and breeding birds in intensively managed fruit-tree plantations in Valais, Switzerland**

Yann Rime

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Intensive fruit cultures replaced high-stem orchards in Europe during the intensification of agriculture in the second part of the 20<sup>th</sup> century. They consist in low-stem tree rows and frequently mown grass strips. In Valais, Switzerland, intensive plantations of apple, apricots and pear trees form a dense matrix intersected with open fields, urban areas and some rare semi-natural structures. This observational study highlights the parameters influencing diversity and habitat use of wintering, migrant and breeding birds at both landscape and parcel scale. 38 transects were surveyed twice in winter 2017-2018 and three times in spring 2018. At landscape scale, areas including more semi-natural structures such as isolated tall trees, forests, bushes and marshes harbour higher bird species richness and abundance. An increasing proportion of fruit cultures as well as crops and vegetables cultures have a negative effect. Trait specific preferences show the importance of semi-natural structures and old extensive orchards in spring for insectivorous birds that avoid intensive plantations where pesticides reduce food availability. At parcel scale, preliminary results show season-specific preferences. In winter, leftover fruits offer an important resource. In spring, only a few species forage in fruit cultures and even common birds such as Great tit *Parus major* avoid them. At landscape scale, increasing the proportion of semi-natural structures and habitat heterogeneity will promote wintering and breeding bird diversity and abundance. At parcel scale, reducing pesticides use and leaving high grass strips between tree rows will increase food availability. Further results will allow more precise recommendations, especially concerning ground vegetation management.

## **Large-scale versus small-scale agriculture: disentangling the relative effect of management and semi-natural habitats on bird's habitat preferences in Ethiopian agroecosystems**

Gabriel Marcacci

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While European countries are facing an inexorable decline of their farmland biodiversity, Africa is experiencing the beginning of its Green Revolution. Unlike the Western World, the agricultural landscape of Ethiopian highlands is still largely dominated by small-scale traditional farms. As the country is confronted to an unprecedented population growth associated to a rapid economic development, Ethiopia has started to intensify its agriculture to increase its food production, resulting in the creation of large commercial farms. We conducted our study in this highly contrasted agricultural landscape, using line-transect method to investigate the effect of the agricultural intensification on bird communities. We tried to disentangle the relative effect of the management and the extent of semi-natural habitat on bird species richness, abundance and diversity. We performed a model selection using Bayesian statistics to assess the habitat selection of the overall bird communities, as well as the wintering, endemic and farmland species. Our results suggest that birds' preferences were mainly driven by the extent of semi-natural habitats surrounding the production surface. Grove (combination of bushes, hedges and trees) played the greatest role in explaining the birds' responses. Furthermore, we found interaction effects between some semi-natural habitats' parameters and the farming system (small-scale vs large-scale), meaning the effect could vary according to the farming system. As a consequence, we encourage the conservation of the remaining native trees and planting new hedges and bushes for the benefit of both the bird communities and the smallholder farmers.

## **Diversification of forest management regimes secures tree microhabitats and bird abundance under climate change**

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The loss of biodiversity in temperate forests due to combined effect of climate change and forest management poses a major threat to the functioning of these ecosystems in the future. Climate change is expected to modify ecological processes and amplify disturbances, compromising the provisioning of multiple ecosystem services. Here we investigate the impacts of climate change and forest management on the abundance of tree microhabitats and forest birds as biodiversity proxies, using an integrated modelling approach. To perform our analysis, we calibrated tree microhabitat and bird abundance models using a field experiment in Southwestern Germany, and coupled them with a climate sensitive forest growth model. Our results show generally positive impacts of climate warming and higher harvesting intensity to the bird abundance, with up to 30% increase. Conversely, climate change and wood removals above 5% of the standing stock led to a loss of tree microhabitats. A diversified set of management regimes with different harvesting intensities applied in a landscape scale was required to balance this trade-off. For example, maximizing the expected bird abundance (up to 11%) and maintaining tree microhabitat abundance loss below 20% necessitates setting 10.2% of the forest area aside and apply an average harvesting intensity of 10.4% of the standing volume. We conclude that promoting forest structural complexity by diversifying management regimes across the landscape will be key to maintain forest biodiversity in temperate forests under climate change.

## Investigating the impacts of a cockle crash on wintering Oystercatchers

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Following a serious crash and recovery of cockles (*Cerastoderma edule*) on the Burry Inlet (Wales, UK), I investigated how oystercatcher (*Haematopus ostralegus*) populations responded to the loss of this favoured prey item. The Burry Inlet estuary is an important wintering area for waders and given its status as a Special Protection Area, the impact of such a crash is important in the context of declines in UK coastal wader populations. Individual birds were caught during yearly ringing efforts on the estuary for inclusion in survival analysis in MARK and their biometric measurements taken for body condition analysis. Over the period of oystercatcher specific catches, cockle stocks recovered to similar levels of total biomass as seen before the crash but now consist of younger, smaller cockles as unexplained mortality continues to hinder their maturation to older, larger individuals. The best fitting survival models show a drop in survival in the year following the cockle crash and there is a positive (but non-significant) relationship between body condition and total cockle stocks indicating the birds were affected by the crash. This single year drop in survival can be further explained though looking at shifts in oystercatcher numbers on the Burry and the adjacent Carmarthen Bay Special Area of Conservation, where the wintering oystercatcher population increased whilst those on the Burry Inlet declined. It is hoped that this investigation will inform future site management and encourage the continuation of long term studies for the analysis of mobile, longer-lived species such as the oystercatcher.

## **Dippers benefit from leaf-fall: an interesting link between aquatic and terrestrial food webs**

Davide Giuliano, Elena Piano, Giovanni Boano, Stefano Fenoglio  
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The family Cinclidae includes five passerine species highly adapted for living along streams, especially preferring upland permanent rivers, where they are able to find abundant aquatic prey and suitable nesting sites. The evolutionary pressures imposed by riverine habitats have likely shaped dippers' reproductive behavior, especially conditioning the selection of an optimal breeding period. In this review, we collected most of the worldwide available literature concerning the members of the Cinclidae family, in order to examine the role of river discharge and food availability as selective pressures for breeding dippers. Overall, the evolutionary processes conditioning the breeding season in Cinclidae likely resulted in a primary synchronization between reproduction and seasonal peaks in prey availability, overriding possible constraints due to hydrological conditions. In temperate areas, life-cycles of aquatic invertebrates depend from highly seasonal inputs of organic detritus (leaf-fall), determining a maximum food supply for dippers in winter and early spring. As a consequence, the breeding season of Palearctic species occurs in this period, despite the apparent inhospitable climate and river flow regimes. Although being less evident, the relationship between organic inputs and dippers' breeding phenology also occurs in tropical species, which synchronized their breeding period with the dry season, when low flow regimes guarantee high leaf-litter amounts and thus high food availability for aquatic invertebrates. Possible consequences of climate change on this relationship, like decoupling litter input and phenology of aquatic invertebrates, are also discussed.

## **Niche use of East Asian buntings on the breeding grounds and effects of wildfire**

Alexander Thomas  
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Many East Asian bird species have undergone population declines in the last years, but the causes are often unknown. In the 1990s, a severe change of land-use took place in Russia. Farmland was abandoned on a large scale and livestock declined drastically. The absence of grazing lead to a strong increase in biomass, which fuels larger and more frequent wildfires. To connect land-use changes and population trends in East Asia is often difficult, because basic knowledge of the autecology of species is lacking. We gathered field data and linked it with remote sensing analyses to study the impact of frequent wildfires on five sympatric *Emberiza* buntings. For this purpose, we mapped all fire events from 2000 to 2017 in a nature reserve in Far East Russia using satellite imagery and modelled the effect of fire on vegetation structures. Furthermore, we recorded habitat parameters on more than 450 presence points of all five species and on more than 200 randomly distributed pseudo-absence points and analyzed habitat preference and annidation of the buntings. With this presentation we show the magnitude of wildfires in the study area, the most important habitat structures for each of the species on their breeding grounds and how the buntings react to different fire frequencies. We conclude that fires might have a short-term negative effect, but in the long term they can provide a means to preserve important habitat structures.

## **Songbird migration along the East Asian flyway as revealed by geolocator tracking**

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Of all the major bird migration systems, the Asian flyways can be considered as particularly data-poor, even though they host the greatest diversity and largest populations of migratory birds globally and comprise the highest number of threatened species. Especially songbird migration routes from northern Eurasia to South-East Asia have hardly been studied at all. Despite intense bird ringing activities, only few long-distance recoveries were achieved.

Light-level geolocation allows the tracking of songbird species down to a body weight of 13g. However, for the East Asian flyway, only two songbird tracking studies have been published. This is unfortunate, as populations of many species migrating along these flyway have apparently declined severely during past decades. This is especially true for the Yellow-breasted Bunting *Emberiza aureola*, once a superabundant bird, but now endangered due to unsustainable harvest during the non-breeding season.

We equipped Yellow-breasted Buntings and other migratory songbirds species with archival geolocators during the breeding season at Muraviovka Park in the Amur region/Far East Russia in 2016 and 2017, and retrieved several of the devices in the following years. Here we present stop-over areas and wintering grounds of different landbird species. Knowledge on their spatio-temporal occurrence enables us to identify overlap of stop-over sites and areas of land-use change and will help to design effective conservation measures en route.

## **Pronounced differences in fuel loads and estimated flight ranges among ten warbler species migrating along the East Asian flyway**

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Studying how birds organize their migration along the East Asian flyway is important, as Asia is in a progress of increasing agriculture intensification, urbanization and industrialization, which is impacting populations of migratory birds. Especially, studying the use and suitability of stop-over habitats is crucial to further protect these refuelling sites as the landscape offers suitable habitat to rest and forage during the long-distance journey of terrestrial small songbird species. Here, it was investigated if differences between the species' energy resources (fuel load) occurred and further how far the species are able to fly (flight range), heading to their wintering ranges in South-East Asia. Additionally, it was analyzed how the progression of the migration season is related to fuel load. 10 closely related warbler species of the genera *Phylloscopus*, *Arundinax*, *Acrocephalus* and *Locustella* were captured at a stop-over site in the Amur region and analyzed concerning their flight ranges, based on their fuel loads. Species differed significantly in their fuel loads which results in different flight ranges. Timing was a key factor in most of the study species, which had significantly higher fuel loads at the end of the autumn migration period. The fastest species had to stop at least seven times on the route for resting and refuelling. Three species carried substantially more fuel than necessary for the next flight bout, which would allow them to fly about 430 km in one night. The long-distance migrants in this study show strong dependencies on timing and perform different adaptations on migration.



## **Malaria parasite effects on the circadian physiology of wild birds**

Robyn Womack

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Circadian rhythms are a core feature of avian physiology, vital for the normal function of biological processes such as the innate immune response. Multiple naturally-occurring factors can affect host rhythmicity in the wild, such as the “circadian disease” malaria, so-called due to timed, synchronous release of new parasites from host red blood cells during its life-cycle. This rhythmic feature of malaria is well classified in human hosts. In birds, little is known regarding the relationship between parasite infection and avian host physiology. We investigated effects of acute malarial infection in the wild on the physiology of nestling great tits (*Parus major*), with focus on changes in day-night expression levels of important genes. We collected blood samples from nestlings, sampling siblings at either midday (12:00 EST) or midnight (00:00 EST). Infection with avian malaria (*Leucocytozoon* species) was subsequently related to midday and midnight expression levels of key genes involved in avian physiology, including anti-malarial immune genes (e.g. TLR4, LY86) and circadian clock regulators (e.g. BMAL1, CLOCK). Physical measures of condition, such as nestling weight, tarsus length and haematocrit, were also included in our analyses. Our study provides new insights into the mechanisms by which malaria parasites can affect circadian physiology of their avian host in the natural environment.

## **Effects of environmental factors on stress physiology of wild Red Kite (*Milvus milvus*) nestlings in Switzerland**

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Nestling growth and environment are linked by physiological mechanisms, through which individuals optimize their health status and performance at each life history stage. In this thesis we tested the effect of food availability and weather conditions on feather corticosterone concentrations (CORTf) and H/L ratio of a population of wild red kite nestlings in Switzerland, along with environmental and individual-specific modulators such as age, sex, brood size and nest altitude. In order to do so, a food supplementation experiment was set up. Our results show that red kite nestlings physiologically react (via increase in CORTf and H/L ratio) to differential food availability at early developmental stages depending on the brood size: control nestlings with two siblings have a higher stress response at young age than nestlings with only one sibling or singletons. Moreover, female nestlings have an overall higher H/L ratio. Altogether, this suggests that intra-brood competition plays a key role in the natural population and that this process follows a hormonal regulation. Precipitation determines an overall increase in H/L ratio due to a physiological need to increase disease resistance, and nestlings at higher altitudes have lower H/L ratio possibly due to an interaction between changes in food availability, lower breeding densities and higher parental investment. Our results support the growing appreciation towards CORTf as a reliable measure to assess environmental, physiological and social challenges, and towards H/L ratio as a measure more reactive to a variety of inputs that require an immunological reinforcement.

## Feather traits indicate differences in nutritional status during moulting between four species of storm-petrels breeding in Northern and Southern Hemispheres

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Moulting is energetically costly for animals. In birds, overlapping periods of moult and breeding could lead to trade-offs in energy allocation. We aimed to compare feather growth characteristics between four storm-petrel species in order to understand differences in nutritional status during moulting and possible trade-offs in energy allocation. Two Southern Hemisphere species; Wilson's (*Oceanites oceanicus*, WSP) and black-bellied storm-petrels (*Fregetta tropica*, BBSP), begin moulting after breeding, while two Northern Hemisphere species; European (*Hydrobates pelagicus*, ESP) and Leach's storm-petrels (*Oceanodroma leucorhoa*, LSP) begin at the end of the breeding season. We expect differences in growth rate relative to feather quality caused by differences in moulting strategies. We collected rectrix samples from breeding adults and measured feather length (FL) and feather weight (FW) (FW:FL feather quality proxy (FQ)), and growth bar width (proxy of feather growth rate (FGR)). We found that BBSP and LSP had similar FL, FW and FQ. WSP had significantly smaller FL, FW and FQ than BBSP and LSP, but larger than ESP. LSP and ESP had similar FGRs. WSP had a significantly higher FGR than LSP and ESP, but lower than BBSP. We found no relationship between FQ and FGR for any species. There were significant relationships between FGR and FL for WSP and BBSP, but not for ESP and LSP. This could be caused by a trade-off in energy allocation between moulting and breeding for the Northern species. In contrast, the Southern species moult during the non-breeding period and may allocate more energy into feather growth.

## **Listen to your Chick. Modulation of foraging effort in Scopoli's shearwater (*Calonectris diomedea*)**

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Germany

Scopoli's shearwaters (*Calonectris diomedea*) form long-term pair bonds with biparental care. The young communicate their body status via begging calls and the parents react with adjustments in their provisioning behavior. The importance of communication for accomplishing the tasks of breeding is expected to be high, yet it is not fully understood how communication influences the behavior of the parents and how it might contribute to an advantageous partner coordination during chick rearing. To investigate how birds modulate their foraging effort (measured by dive rate) according to signals they get from their chick, breeding pairs from the colony of Linosa Island (Italy) were equipped with accelerometers. Additionally, colony attendance was monitored with cameras. In nights with both partners present at the nest, comparisons were made between first and second arrival and the duration and dive rates of their following foraging trips. As the first arrival encountered the chick in a hungrier, more demanding status it was expected to see a difference in the subsequent trip. Indeed, the second arrival performed less dives than the first. No difference was found in trip length between first and second arrival. Interestingly, in 40 % of nights both partners were present at the nest, an unexpectedly high frequency considering efficiency and optimal investment. The results of this study suggest that parent-chick communication influences the at sea foraging behavior but does not affect the colony attendance patterns and that there is an importance of encountering the partner at the nest.

## **An approach to the study of effects of fire on birds in Mediterranean woods**

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Drastic alteration of a forest structure caused by fire can modify the composition and abundance of plant and animal species and in particular affect the nesting bird community. Moreover, fire severity and time since fire could be further factors to understand the complex effects on biological communities. We studied changing in birds communities after the fire of September 2017 in "Bosco Difesa Grande", Gravina in Puglia (BA). In the first spring season after the fire the local nesting community was sampled in accordance with the point count technique (Bibby et al., 1992) on 10 minutes in distinct areas of the forest. The species diversity and abundance were compared in the set of different landscapes. We performed 6 repetitions on 6 stations in burned woods (B), 3 in unburned (N) and 3 in open agricultural area (A). The whole community counted 30 species. In B were observed 18 species, 18 in N and 12 in A. The total number of observed pairs was 70 in B (total number /2 as the number of stations was double), 99 in N and 201 in A. The low diversity in open habitat is contrapose to the greater number for specialized taxa. Only in N still was possible to find *Dendrocopos major*, *Oriolus oriolus*, *Poecile palustris* and *Troglodytes troglodytes*, not present in the other landscape. The work want to be the base of a pluriannual monitoring of the evolution of this so important residual wood in the southern lowland of Italy.

## **Birds as indicators of forest biodiversity change under Natura 2000**

Alessia Portaccio

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In Europe, Nature Directives (Habitats Directive - 92/43/EEC - and Birds Directive - 2009/147/EC) represent the most concrete action for biodiversity conservation through the establishment of the Natura 2000 network of protected areas. After more than 25 years, some gaps and shortfalls are still observed in Natura 2000 implementation. For instance, the 80% of forest habitats are in an unfavourable conservation status. There is, therefore, the need of a better understanding of the changes in forest biodiversity status under the Natura 2000 protection, and the present PhD research project aims to assess it using birds as bioindicators. In fact, birds are commonly-used as proxies of ecosystem health and quality. The research is going to be implemented at a double scale: at the Natura 2000 site and at the regional level. After choosing a couple of Natura 2000 sites in Italy and Germany as study cases, I will collect data about forest habitat features and bird populations. For this last, during the breeding season, I will apply the point count method integrated with the bioacoustics analysis of birds' songs and calls recorded through automated fix recording devices. At the regional level I will apply the counterfactual approach to behold the additionality of Natura 2000 implementation, comparing the data of the Italian Breeding Bird Monitoring Scheme MITO 2000 of both outside and inside the protected areas. From the results obtained I will draw some recommendations about management and monitoring of forest protected sites addressed to decision-makers and implementers.

## **Natal Dispersal of a Resident Bird: Insights from Movement Ecology**

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Natal dispersal is assumed to be a multi-stage (departure, transfer, settlement) process. Anyhow the identification of the multiple phases of dispersal is often arbitrary, due to the limited information between departure and settlement areas. In the present study we considered data of ~40 daily radiotracked juvenile middle spotted woodpeckers from a Spanish population; taking into account velocities, distances from the nest and movement trajectories, a team of expert carried out path segmentation – i.e., the identification of the phases of dispersal - for each juvenile's movement record. Once path segmentation was completed the possible influence of intrinsic, habitat and social factors on individual behaviour at the beginning of natal dispersal, and in each phase of the process, was enquired. The expert based approach allowed us to successfully segment into ecologically meaningful stages (pre-departure, transfer, settlement) the movement of juvenile woodpeckers. Larger juveniles initiated dispersal earlier and appeared more likely to not visit their natal territory again, once they had left it. Moreover juveniles born in high-populated areas moved shorter distances and females overall move faster and longer than males. On the other hand a clear influence of habitat factors was not evidenced. In conclusion, the high synchrony in the timing of dispersal, together with the occurrence of a short restlessness period composed of fast movements occurring at the beginning of the transfer phase, and the low influence of habitat/landscape factors, suggest that dispersal may be mainly an ontogenetically-determined process slightly modulated by environmental factors.

## **Seasonal stability of individual characteristics of the Eurasian Woodcock (*Scolopax rusticola*) roding call**

Charlotte Warburton

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The Eurasian woodcock (*Scolopax rusticola*) is a difficult bird to monitor due to its cryptic plumage combined with its secretive behaviour. However, it is easier to detect this species during the breeding season when males will display by flying over clearings in the forest while simultaneously vocalising. This breeding behaviour is known as “roding”. Vocal individuality is a known phenomenon in birds and has been recognised as a survey method for secretive and rare species such as the European bittern and the Corncrake. This distinctive call/behaviour of the Eurasian woodcock allows for a clear census method of counting breeding males and therefore estimating the population size of this species. Previous studies have indeed established that certain characteristics of the roding call enable us to identify individual males.

Our study focused on the stability of these characteristics within the breeding season.

The study was conducted in the region of the Jura mountains in Switzerland across two breeding seasons. Individual males were radio tagged and then recorded during roding.

Preliminary results suggest that the characteristics of the Eurasian woodcock’s roding call are not stable during a breeding season on our study site and therefore cannot be used as a monitoring tool of the local population.



## **Beware of the moonlight: Environmental effects on nightjar use of roads**

Miguel de Felipe Toro

*Ludwig Maximilian University of Munich, Germany*

Foraging decisions are made to maximize energy gain by increasing food intake and decreasing the energy costs of movement and thermoregulation.

Among nightjars, it has been suggested that they use roads at night as an open observation platform to forage for flying insects and to thermoregulate on a surface that absorbs heat during the day and attracts insects at night. Here we investigate nightjar use of roads in relation to environmental variables known to influence insect availability and the thermal requirements and foraging efficiency of nightjars.

Between April and October 2009-2017, we carried out weekly counts of red-necked nightjars (*Caprimulgus ruficollis*) along a 24-km road network crossing the Doñana Natural Park, SW Spain. To assess changes in nightjar abundance (birds/km), we fitted a LMM including a set of 16 environmental variables as explanatory factors. Additionally, we included the week to account for seasonality, and year as a random factor.

We found that nightjars are most abundant on roads in either cold, dark nights or warm, bright nights. Being its abundances negatively affected by wind speed and increasing in nights warmer than the monthly average.

Nightjar use of roads is therefore jointly determined by ambient temperature, amount of moonlight, and wind conditions—factors that all affect the thermal needs and foraging efficiency of nightjars. Our results suggest that nightjars use roads either to minimize their thermal needs under poor foraging conditions or to maximize food intake rates under optimal foraging conditions, most likely in response to common fluctuations in insect availability.

## **Molecular phylogeny and phylogeography of Kites *Milvus spp.* based on mitochondrial cytochrome b gene polymorphism**

Ivan J. Starikov, Hedwig Sauer-Gürth & Michael Wink  
*University of Heidelberg, Germany*

The genus *Milvus* consist three species, each with proper subspecies: Red Kite *M. milvus* in Europe, Black Kite *M. migrans*, Old World cosmopolite, and Yellow-billed Kite *M. aegypteus* in Africa. The relationships between Red and Black Kites were investigated with mitochondrial DNA genes (Heneberg et al., 2016), at the same time a general phylogenetic overview of this genus represent interest. We used sequences from the birds across all their species range issued from our collection and GenBank, a part of *cyt b* gene was selected for analysis. Obtained results allow differentiating these taxons on subspecies level, also we observe a correspondence of haplotypes with their geographical distribution.

## Birds and City Heat

Richard Bufton

*University of Birmingham, UK*

The heat that buildings absorb from sunlight combined with anthropogenic heat makes cities warmer than their rural surroundings: the urban heat island (UHI).

City heat influences the distribution of organisms (Martinez-Morales *et al.*, 2010). As human populations grow the UHI will be an increasingly important environmental factor and is analogous to future climate change (Cleugh and Grimmond, 2012).

Birds organise their breeding activities to maximise reproductive output. How do varying heat levels influence their reproductive activities? Does the UHI require more activity or less? Does the UHI affect avian reproductive output?

In Birmingham, UK, Blue Tits willingly use nest-boxes and are widespread, making them ideal study subjects. Thermistors, PIT tags and RFID readers will enable the assessment of Blue Tit breeding activity across the UHI.

Extra heat in cities makes city winters warmer. Does this enable birds from warmer regions to survive in cities?

Rose-ringed Parakeets (*Psittacula krameri*) originated in the sub-tropics but are surviving and flourishing in European cities, including London, where a population of over 8,500 breeding pairs is increasing by an estimated 30% per year, but only increasing their range by 0.4km per year causing increased population density.

Using datasets from the British Trust for Ornithology and weather observations, I will examine the role of the UHI in enabling feral parakeets to survive and breed in cities where the conditions are outside their native climate-envelope and to try to detect any effect of increasing parakeet populations on native hole-nesting birds.

## Blue Tits' aromatic nests – a matter of nests and nestlings

Bárbara Afonso Pires

*University of Évora, Portugal*

Female Blue Tits (*Cyanistes caeruleus*) naturally add fragments of aromatic plants to their nest cups throughout the breeding season. Secondary chemical compounds present in these plants are considered to explain this behaviour, since they have known antimicrobial, anti-inflammatory and insecticidal properties. Aromatic plants may help to reduce ectoparasite loads in nests (Nest Protection Hypothesis - NPH) and/or improve nestlings' immune system under a parasite attack (Drug Hypothesis - DH).

The use of aromatic plants in nests vary with their availability in the nest surrounding area and with females' individual preference.

Frequency of aromatic plants in nests and their availability in the nests' surrounding area was compared and three aromatic plants - *Dittrichia viscosa*, *Lavandula dentata* and *Calamintha baetica* - were used more than expected considering their availability in the study area, suggesting that females actively seek for the plants that give them protection.

The same three species were experimentally supplied to Blue Tit nests in a different study area, but females found the need to replace them or add other aromatic plants. Aromatic plants added by females were used across breeding stages but a higher number and frequency was found in the incubation and nestling stage.

Although the NPH has not received full acceptance yet, since numbers and detrimental effects of ectoparasites do not decrease with presence of aromatic plants, nests with aromatic plants produce nestlings with better body condition (DH), suggesting that aromatic plants may attenuate the negative actions these parasites have on nestlings.

## **Effects of weather and food availability on parental care behaviour on the nest in Red Kites (*Milvus milvus*) in Switzerland**

Valentijn van Bergen, Patrick Scherler, Martin Gruebler

*Van Hall Larenstein University of Applied Sciences in the Netherlands, The Netherlands*

In breeding birds, food availability affects the trade-off between time used for foraging and guarding the brood. Among numerous human-related factors affecting food availability for red kites (*Milvus milvus*), anthropogenic feeding has been suggested to have an influence on parental care behaviour. In this study, we investigated the influence of food availability and environmental conditions on parental care at the nest site in a population of red kites in Switzerland. A feeding experiment in combination with time-lapse observations at the nest using camera traps, was carried out. The two main parameters measured were i) adult nest attendance during the daylight period and ii) the ratio of four different standard behaviours exhibited by the adult at the nest: guarding, feeding, warming and rain-protecting. Adults of supplementary fed nests spent significantly less time on the nest with increasing precipitation, compared to adults of control nests. Proportions of adult behaviours exhibited were significantly influenced by weather, where wind and precipitation negatively influenced all behaviours, except rain-protecting behaviour. The results of nest attendance could be explained by the fact that supplementary fed nestlings have a better body condition, which decreases the need for parental nest attendance in adverse conditions. Weather modulates adult behaviour to increase the likelihood of immediate survival (short-term effect) and health condition of the offspring (long-term effect). These results show that weather conditions directly affect nest attendance, but the extent to which was modulated by food availability. In contrast, the behaviours exhibited on the nest appeared only to be weather related.

## Effects of vegetation structure on the bird community of an Alpine ecosystem

Riccardo Alba, Susanne Jähnig, Cristina Vallino, Domenico Rosselli, Marco Pittarello, Antonio Rolando & Dan Chamberlain

*University of Turin, Italy*

The relationship between the physical structure of the habitat and biodiversity has been investigated from different viewpoints in recent years. It has been documented that as the environment gets more complex in structure, the number of species in many animal groups increases. Focusing on birds, this correlation has been well described by MacArthur & MacArthur in 1961: in fact, more species of birds are commonly found in a forest than in a field of the same size. This is probably due to the higher number of niches that a habitat with complex vegetation provides. Taking the typical alpine ecosystem of Parco Naturale della Val Tronca as a study area, I investigated whether there is a significant correlation between vegetation structure and bird distribution. Data from point counts and vegetation surveys were collected and statistically analyzed. Results confirmed that vegetation structure plays an extremely important role in determining the bird community richness and diversity. Shrub cover has been identified as the key factor dictating bird distributions in the ecotonal habitat located in the subalpine zone which has a high structural heterogeneity and a mosaic structure. However, vegetation structural diversity *per se* was not important for most species. In the end it was possible to give some management suggestions, such as the use of grazing, for the maintenance of the current landscape heterogeneity which provides a high number of ecological niches. The challenging remaining question is, in a constantly changing environment due to global warming, would it be better to let things develop naturally without intervening, or should we actively manage habitats to prevent or slow change?

## **Foraging behaviour variation in an alpine bird and links with mountain anthropization**

Cristina Vallino, Enrico Caprio, Fabrizio Genco, Dan Chamberlain, Claudia Palestini, Angela Roggero, Antonio Rolando

*University of Turin, Italy*

High mountain habitats are jeopardized by different factors and human activities at high altitude are among the potential threatening elements. However, negative repercussions can sometimes be balanced by positive events related with human presence like food and nest site providing. Nonetheless, gaps in the knowledge of such interactions are still present. The Alpine Chough, a high altitude bird species, is used here to assess the existence of behavioural adjustments according to anthropic pressure in two areas with different level of human disturbance. Moreover, spatio-temporal trend of key-preys, thus grasshoppers, is studied since it can influence foraging behaviour parameters. Concerning the target populations, results show that in the tourist area flock size is larger, while vigilance and take off distances are shorter. Regarding orthoptera, a further result demonstrates a poorer grasshopper abundance in the tourist area, with a higher poverty close to ski pistes. Conclusions reveal behavioural adjustments just for the tourist area population. However, the observed habituation can be referred both to people presence and/or to food sources distribution. Therefore, further investigation is needed to assess the amount of impact of human activities on alpine bird populations. Indeed this aspect is concerning since human activities are becoming more and more spread at high altitude.

## **Invasive species: the case of the Red-billed Leiothrix (*Leiothrix lutea*)**

Samuele Ramellini

*Stazione Romana Osservazione e Protezione Uccelli (SROPU), Italy*

Since decades, the topic of invasive species is one of the hottest in scientific literature. The Red-billed Leiothrix (*Leiothrix lutea*) is an invasive species in Italy. This passerine is native to Asia, and was first recorded in Latium (Italy) in 1998.

This research aimed at addressing two different issues. First of all, distribution data of *L. lutea* were obtained from the *ornitho.it* database, personal communications, and the relevant literature. The data were then assembled into a survey of this species' distribution in Latium. A second topic was a yearly research to obtain data on the behavior, habitat selection, intraspecific and interspecific interactions of the species.

The Red-Billed Leiothrix has been found in 27 municipalities in Latium; various sites of presence are recorded for the first time. The distribution data allowed to assess its spreading during the last decades and to advance some hypotheses about the future invasion pathways. Data about the altitudinal distribution have been obtained through geolocation data in *ornitho.it*, and they have been analyzed through the Corine Land Cover layers to get information on this species' habitat selection; moreover, these data have been compared with data from other invasion areas.

The vertical distribution and phenology in two habitats is discussed, confirming that the species performs seasonal movements. An overlapping between the Red-Billed Leiothrix's and other autochthonous species' voices is hypothesized. Finally, intraspecific and interspecific interactions, including interactions with humans, have been discussed.



## **Analysis of three years of bird ringing in the Natural Park of Val Troncea (Italian Alps)**

Camille Mermillon

*France*

In 2015 started a national project in Italia called MonITRing to study the avifauna. The project is based on a network of bird ringing stations all around the country.

In the Piedmont region, around 100 km from Turin in the Alps in the Natural Park of Val Troncea, one ringing place is active from the beginning of the project. 519 birds have been trapped in three years for 38 species. The area of capture is quite small but there is a true diversity of habitat (wetland, woodland and pasture). Are there differences between those habitats in terms of species richness or abundance for the bird community and for single species?

## **Syntax organization in the song of Siberian Rubythroat (*Calliope calliope*)**

Maria Monakhova

*Moscow State University, Russia*

The syntactic organization of the avian songs is of particular interest in interdisciplinary research of bird vocalizations and human speech. In our research, we describe the structure and the syntactic organization of the advertising song of the Siberian rubythroat. Vocalization of rubythroat is a multilevel system with a hierarchical organization. Separate notes are grouped into phrases, phrases into songs (strophes), and the sequence of songs forms a vocal session. Individual repertoire can include up to 500 notes and 190-260 phrases. Phrases consist of a sequence up to 9 notes, which are always sung together in the same order. The initial phrases are always at the beginning of the strophes. There may be 9-15 of them in an individual repertoire. The order of the subsequent phrases has a “branching” structure. The choice of the next phrase is limited in the each branch point. The sequences, which begin with different initial phrases, contain a limited number of shared phrases. The same phrases are almost never repeated in one strophe. The possible number of individual songs is essentially infinite because of tendency to improvise. However, there are a significant number of repeated (stereotyped) phrase sequences (up to 12 in one strophe). These patterns can be considered analogous to “song types” in other bird species. But in case of rubythroat, they are only the beginning of a more extended construction. We plan to compare the syntactic organization in Siberian rubythroat to White-tailed rubythroat (*C.pectoralis*) in the near future.

## **Preliminary results on an avian brood parasite system in Mirandola Valley wetlands**

Stefano Borghi, Carlo Giannella, Matteo Dal Zotto, Luigi Sala and Daniela Campobello  
*Università degli Studi di Modena e Reggio Emilia, Italy*

Brood parasitism is an alternative reproductive strategies adopted by several avian species. The cuckoo is the most common avian brood parasite in Europe and recently indicated as an important indicator of biodiversity. Unfortunately, the cuckoo has been declining but a study using satellite devices showed that individuals migrating across the Italian peninsula have a higher survival than those migrating across Spain. Our study site is right within the Padana Plain and therefore an ideal area to investigate the beneficial features suggested to occur on this stop-over site. Here we present results of pilot study addressing mostly three main questions. First, we needed to verify whether the cuckoo and its hosts are still abundant as reported approximately 10 years ago. We quantified the abundance of the cuckoo and some of its hosts such as the reed warbler (*Acrocephalus scirpaceus*) and the great reed warbler (*A. arundinaceus*) by using the IPA census method. The second question was on parasitism frequency, then we searched nests and checked them regularly to record any potential parasitism occurrence, recording also micro-environmental features such as depth of water, height and diameter of reeds around the nests. The third question was on any difference in prey delivery by adults depending of the chick species to raise. Accordingly, we placed a camera in front of nests to verify whether this method could be suitable to our goal and therefore able to detect delivery frequencies and prey size.

## **Bird collection management and its relevance: From Italy to Sweden and return**

Gloria Ramello

*Italy*

From August to the end of September, I will be in Stockholm for Erasmus Traineeship experience.

I will do my internship at Natural History Museum of Stockholm (Naturhistoriska Riksmuseet), this concern management and care of museum collection mainly bird specimens such as skinning bird, skeleton preparation and proper labelling.

Museum collections are so important and necessary for several research aims, for instance systematic, type specimens, genetics, distribution, paleontology, paleobiogeography, forensic zoology.

In this way ancient naturalists could discover some of natural secrets and they allowed categorization of animals, to do this they often used morphometric measurements and colour patterns analysed on their collecting specimens, despite of small availability of field guides.

Regarding bird collections, these are usually implemented by random finding, anthropic accident discovery, wildlife rescues, and collecting in addition to collection of historical expeditions.

Nowadays importance of museum collections is a bit underestimate maybe for utilisation of others research techniques, but it remains so important both end in itself and in support of others research fields.

Moreover moving abroad or in my instance only to another European country, we can found several uses and preparation techniques, this permits to compare prepping methods and propose new scientific research.

The aim of my work will be show my internship activities and discuss about collection management differences and the relevance of bird specimens between Sweden and Italy, using as models Naturhistoriska Riksmuseet of Stockholm and Natural History Museum of Carmagnola.

## **Do more aggressive great tits, *Parus major*, show more song overlap?**

Veronika Rohr

*Ludwig Maximilian University of Munich, Germany*

Acoustic communication is the transfer of information from a sender to a receiver using vocalizations. For birds, singing plays an important role in territory defense, a highly aggressive context. One song trait controversially debated to signal aggressiveness is song overlap, which is singing during an opponent's song. This study assessed whether higher aggressiveness is linked to more song overlap in great tits (*Parus major*) for the first time focusing on within- and between-individual variation in aggression.

Therefore, simulated territory intrusions were performed in 12 populations with 50 nest boxes each in 2017. The focal bird was confronted with a dummy and a playback. Its vocal response was recorded and its aggressiveness (minimum approach distance) measured. With the "SampleGaps" method of the "Song Overlap Null model Generator" (SONG), the birds' vocal performances were randomized and analyzed. Overlap was calculated as the difference between the observed and the after randomization expected number of overlapping songs and in the same way for the total overlapping time.

Contradicting our previous predictions, higher aggressiveness was linked to a significantly lower (rather than higher) number of overlaps, as on average more aggressive birds overlapped significantly less often (between-individual differences). But individuals did not seem to adjust their overlap behavior when altering their aggressiveness (individual plasticity). For length of overlap, a trend towards the same pattern was seen.

Results indicate that song overlap either does not directly signal physical aggressiveness or birds face trade-offs between physical and acoustic aggression resulting in different territory defense strategies.

## **Song Variability and Singing Activity of the Red-breasted Flycatcher**

Ondřej Belfín & Lucia Turčoková  
*Charles University, Czech Republic*

Bird vocalization is one of the best studied ways of animal communication. It can be strongly affected by various social and ecological factors, and thus highly variable. To study song variability at the inter-individual as well as population level, the Red-breasted flycatcher (*Ficedula parva*) was chosen as a model species.

A field work was carried out in the Jeseníky Mountains in 2013-2018. Detailed acoustic monitoring resulted into subsequent analysis of more than 2,700 hours of recordings. Obtained data served to describe diurnal and seasonal activity of recorded males. In addition, high quality recordings of my own and the ones received from other European sites were used to characterise the basic song features and to determine individual types of song. Finally, the geographical distribution of detected song types was evaluated.

The study shows different vocal activity during the day. Additionally, comparison between songs produced in a morning and during a day revealed differences in the number of elements and the lowest frequency. This difference was obvious in the period after mating. The vocal activity can vary also throughout the season and among particular males, depending especially on the presence of a mate.

Overall 14 different song types and two subtypes of the basic song were described. Although red-breasted flycatchers use many song types, no differences in geographical distribution of these song types have been found.

This work is a first one describing in detail the red-breasted flycatcher's vocalization, and will serve for further research and help to specify monitoring methods.

## Teaching bird identification in Russia: Two seasons of BirdID program

Veronika Samotskaya

*Birdwatching Moscow, Russia*

In Russia, citizen science is just at the beginning and bird reporting is the most developed part of it. However, the general knowledge of birds among non-specialists in Russia is still very low. To improve this situation we organized a local birdwatching community in Moscow (scipeople.net) and started to conduct birdwatching excursions in city parks. With the help of social networks, we were able to attract more than 400 participants with different knowledge and skills. Our community had also attracted and joined people that had learned by themselves. In 2017 we joined BirdID teaching program of Nord University to advance people's skills in species recognition and prepare them for more professional fieldwork. During BirdID course with the students we visited many key ornithological locations in Moscow and Moscow region as well as more remote areas of Russia Central Forest area. The course was useful not only in teaching but also in collecting data. For example, we added several species to the list of Polistovsky Nature Reserve in Pskov region. In 2018 we conducted the second season of teaching. This time we tried to avoid mistakes that we made during our first year. We continue to track activities of our students even after they had completed the exams. Three of them joined the program as assisting teachers, some went volunteering to nature reserve and some started to conduct excursions in parks of Moscow for general public.

## **Ornithology and museomics: how can natural history and ornithological collections benefit from advances in genomics?**

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If natural history collections can be seen as an old and dusty assemblage of dead (and sometimes extinct) plant and animal species, they have also been of great interest for many scientists. Opening a window to the past, they allow us to observe recent changes that occurred since the beginning of collections (e.g. linked with industrialization), but also to get clues on much older phenomena such as speciation events.

Recent advances in sequencing technologies enable the analysis of dry skins, whose DNA is highly fragmented due to both age and specific skin treatments (such as arsenic). With little to no modification of classic extraction protocols, it is now possible to obtain genomic data consisting mainly of mitochondrial sequences, with a smaller amount of nuclear data. These genomic data, compared among individuals or species, can help us clarifying taxonomy, dating speciation events or locating geographic origins of groups.

To give a few ideas of what is feasible with museum samples, I will use the example of the pigeons and doves family (Columbidae), a rich, diverse and worldwide distributed group with many phylogenetic uncertainties. Its current richness and distribution are the result of many speciation and dispersal events that can be studied at a regional scale for some genera, or more widely for the whole family. I will present a work we conducted on the biggest extant representatives of the family, the crowned pigeons from New Guinea, and will give an overview of the preliminary results we obtained for the whole family.