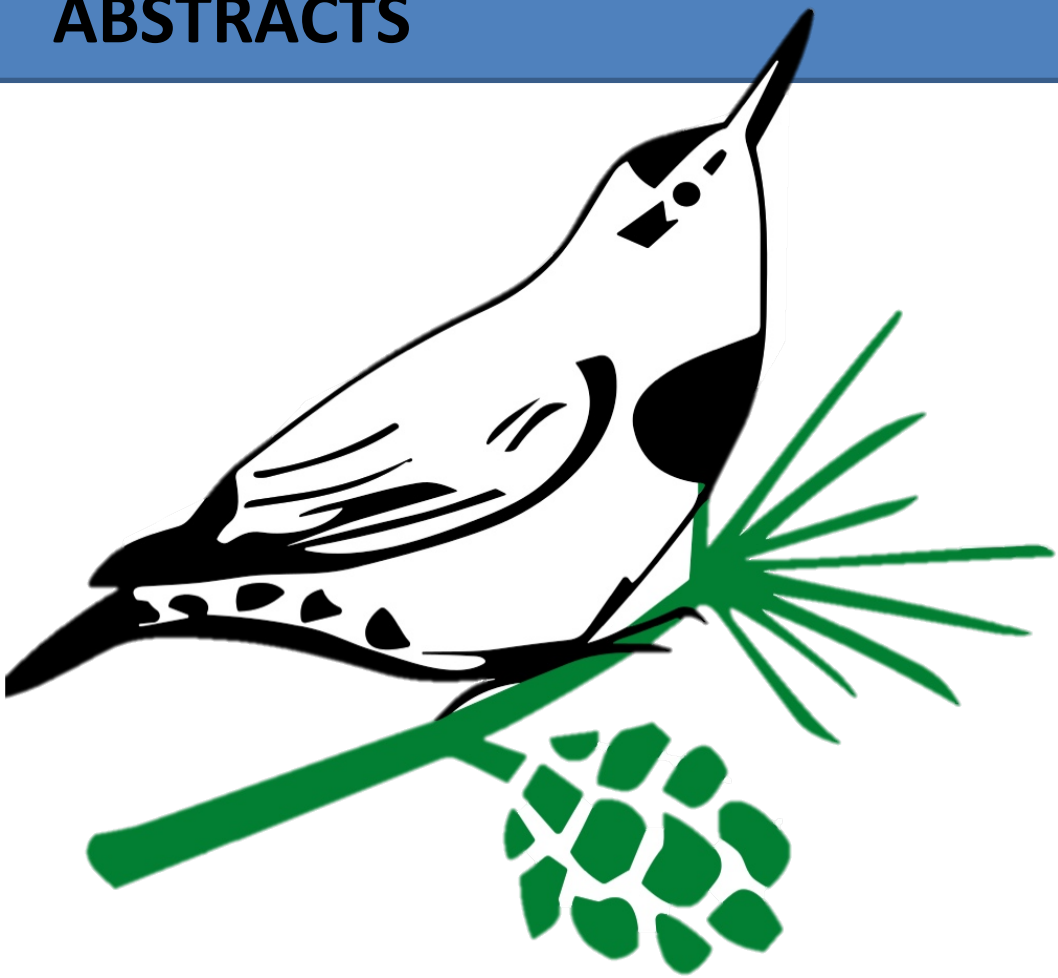
ABSTRACTS



7th International Eurasian Ornithology Congress

18-21 October 2023, İzmir, Türkiye

VII. International Eurasian Ornithology Congress

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Abstract Book

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Tamer ALBAYRAK, Giovanni FORCINA, İlhami KİZİROĞLU, Ali ERDOĞAN

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Contents

Final category: Invited

INVITED_1: **THERMOREGULATORY STRATEGIES DURING BREEDING**

Jan-Åke Nilsson, Andreas Nord

Evolutionary Ecology, Department of Biology, Lund University, Lund, Sweden

Birds inhabiting seasonal environments need to thermoregulate most of the time to stay homeothermic. Even during breeding, nights might be cold enough to call for heat production, potentially limiting the workload for parents. During the day, when feeding their brood, parents might be faced with removing excess heat produced by their activity. By manipulating workload, we found that birds working hard during breeding do not defend strict homeothermy but allow their body temperature (T_b) to decrease during the night and to increase during day in pace with ambient temperature. Females tending large broods reduced body temperature by several degrees at night probably as a consequence of entering it with low resources due to a trade-off between self-feeding and feeding their nestlings. During the day, on the other hand, parents became hyperthermic in response to increased parental effort, *i.e.* work rate when feeding nestlings. Thus, it seems that when the temperature gradient between body and environment decreases and much heat is produced in the muscles, these birds have trouble dissipating excess heat. We tested this hypothesis by removing feathers over the breast muscles to facilitate heat loss. Parents with large broods fed them equally often but were heavier than control (unplucked) parents doing the same. We speculate to what degree accumulation of heat may put constraints to the work rate of birds.

INVITED_2: **GALAPAGOS ISLANDS: FOLLOWING THE FOOTSTEPS OF CHARLES DARWIN**

Michael Wink

Heidelberg University, Heidelberg, Germany

Charles Darwin visited the Galapagos Islands (now Ecuador) in 1835. He described living on these volcanic islands as a torture and was happy to leave the islands after a month. However, he was thrilled by the tameness of reptiles and birds and discovered morphological differences between related species occurring on different islands. This experience was important for finding arguments for the evolution of species, as discussed in the "Origins of species" which he published in 1859. He also observed and collected finches with differences in beak morphology, which are termed Galapagos finches and more often Darwin's finches. Darwin thought that speciation in this group was messy and did not follow an obvious pattern. The Galapagos islands were visited in the 20th century by David Lack, who could not make sense of this group either (Lack 1947). Later, he saw a pattern and used it as an example for adaptive radiation. This topic was widely explored by Peter R. Grant and B. Rosemary Grant and is now in every textbook of evolution. However, the use of DNA sequence data and genome data has made the story even more complex. Darwin, Galapagos and Darwin's finches will be the topic of this plenary.

Final category: Behavior

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ORAL_1: **THE DIVERGENCE OF MALE REPRODUCTIVE STRATEGY DRIVES NOMADISM IN WOOD WARBLER (*Phylloscopus sybilatrix*)**

Anna Kretova[1,2], Nikolay Lapshin[1]

[1]Institute of Biology of the Karelian Research Centre of the Russian Academy of Sciences, Petrozavodsk, Russian Federation. [2]Federal State Budgetary Institution "Nizhne-Svirsky State Natural Reserve", Lodeynoye pole, Russian Federation

The Wood warbler *Phylloscopus sibilatrix* is a nomadic species whose annual abundance can vary significantly due to the frequent change of nesting sites each year. The reasons for the low nest-site fidelity of this species are discussed. We broadcasted different versions of the song with high or low rate of performance (6 versus 2 trills per minute) to attract males at the treatment sites (a behavior termed "conspecific attraction"). We marked males with colored rings during the breeding season of 2021-2023. During the eggs laying of each pair, new males appeared within a radius of 150 m (“attached” males), disappearing after incubation start. The number of “attached” males was significantly higher at the plots where we broadcasted a song with high rate of performance compared to control plots (no audio playback). The number of mated males did not increase significantly at any treatment plots compared to control ones. The wood warbler is considered a monogamous species, however, we put forward a hypothesis that males have two reproductive strategies: conservative and opportunistic. Conservative males typically display nest-site fidelity and bound with female, while opportunistic males display a low nest-site fidelity, regularly changing their territory shortly after they copulated with a female from the nearest pair. The opportunistic strategy aims to leave as many extra-pair offspring in local nests as possible. We assume opportunistic males rely on the song activity of conservative males to find females before incubation start. The study was supported by a grant from the Russian Science Foundation No 23-24-00415.

ORAL_2: **FLOCK DEFENCE SYSTEM IN THE GREAT BUSTARD (*Otis tarda*, LINNAEUS, 1758)**

Mehmet Mahir Karataş, Muharrem Karakaya

Osmangazi University, Eskişehir, Turkey

Similar to several other large birds inhabiting agricultural habitats, the Great Bustard (*Otis tarda*) is attractive to hunters other than natural predators, which raises growing conservation concern for this species at global level. Nevertheless, this species has evolved some adaptations for self-defense, such as camouflage and living in flocks. Surprisingly, a thorough examination of global literature on this topic revealed how scant the information available was, with just a few reports of sentinel individuals guarding the main flocks in Turkiye. This study was carried out from March 2016 to February 2020 to assess whether the Great Bustard has a flock defense system and how it works. The results indicated that this species relies on 3 different flock defensive strategies against the fast-growing social unrest and predation pressures in our country.

ORAL_3: **AN OBSERVATION ON EURASIAN COLLARED-DOVE (*Streptopelia decaocta*) AND LAUGHING DOVE (*Spilopelia senegalensis*)**

Nilgün Yapıcı[1], Ebru Kaya Başar[2], Ali Erdoğan[3]

[1]University of Akdeniz, Faculty of Agriculture, Department of Animal Science, nilgunya@gmail.com, Antalya, Turkey. [2]University of Akdeniz, Rectorate, ebrukaya@akdeniz.edu.tr, Antalya, Turkey. [3]University of Akdeniz, Faculty of Science, Department of Biology, aerdogan@akdeniz.edu.tr, Antalya, Turkey

This study was carried out in the province of Antalya, located in the south-west of Turkey. We attempted to establish if competition may occur between Eurasian collared-dove (*Streptopelia decaocta*) and laughing dove (*Spilopelia senegalensis*) in the same family is possible. Eight field observations in 19 districts of Antalya were made every 3 months in 2018 and 2019. The occurrence of both doves in the districts as well as their common habits in nesting and feeding behaviours were determined. In the initial observation of the study (winter, 2018), while no record of the laughing dove was found in 7 districts, the other species was found in 5 of them. However, in 2019, the number of districts with no laughing dove dropped to 1. When the presence data of the Eurasian collared-dove and laughing dove based on the first and last observations of the study were tested (Mann Whitney U test), there was no statistical difference in the numbers of both doves in winter 2018 ($p=0.08$). However, in autumn 2019, there was a statistical difference in the numbers of these two species ($p=0.032$). Eurasian collared-dove were less abundant than laughing doves. It has been observed that their habitats were similar and nest in similar areas. It is thought that laughing dove's ability to live more closely with humans than the Eurasian collared-dove provides an adaptive advantage. As a result, this situation turned into a disadvantage for the latter species, causing its displacement to other areas.

ORAL_4: **BEHAVIOURAL AND COGNITIVE DIFFERENCES BETWEEN RURAL AND URBAN GREAT TITS – A COMMON GARDEN STUDY**

Utku Urhan[1,2], Barbara Tomatoni[1], Marcel Visser[1], Kees van Oers[1]

[1]Netherlands Institute of Ecology (NIOO-KNAW), Wageningen, Netherlands. [2]Lund University, Department of Biology, Lund, Sweden

Individuals from different populations of the same species may differ in a range of phenotypes. Such phenotypic differences can be shaped by non-genetic responses to environmental factors and can be caused by genetic differences due to differences in selection between populations. For example, urban and rural habitats differ in their demands for survival and reproduction. Cognitive and behavioural adaptations are important for fitness optimisation and have been found to vary between rural and urban populations of the same species. However, whether differences in cognitive abilities between urban and rural populations are predominantly caused by genetic differences or are formed as non-genetic responses to disparate environmental factors has rarely been studied. In order to do this, we conducted a common garden experiment using the great tit as a model species. We collected eggs from in total 6 rural and 5 urban populations in Belgium and The Netherlands. Eggs hatched in foster nests in one wild population in the Netherlands and were hand reared in captivity from day 10 onwards. We subsequently tested the behaviour of these birds for problem solving and motor inhibition as well as novel environment in F1 and F2 generations. We expect that the variation between rural and urban birds in these traits is mainly caused by genetic differences between populations and are therefore maintained in both the F1 and F2 generations. This study will add to discussions of whether plastic or genetic factors underlie the phenotypic differences between populations living in contrasting environments.

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POSTER_1: **BIODIVERSITY AS THE HETEROSPECIFIC SOCIAL INFORMATION: THE EFFECT ON TERRITORY SELECTION AND VOCAL MIMICRY IN THE MARSH WARBLER**

Eng. Sylwia Pustkowiak[1,2], Zbigniew Kwieciński[3,4], Piotr Skórka[1]

[1]Institute of Nature Conservation, Polish Academy of Sciences, Kraków, Poland. [2]Population Ecology Lab, Faculty of Biology, Adam Mickiewicz University, Poznań, Poland. [3]Department of Ecology and Anthropology, Institute of Biology, University of Szczecin, Szczecin, Poland. [4]Department of Avian Biology and Ecology, Faculty of Biology, Adam Mickiewicz University, Poznań, Poland

Biodiversity is essential for ecological processes, but how do animals perceive biodiversity? Does it affect their distribution and performance? Biodiversity of habitat can indicate resource availability and strength of the interactions between species, thus, should affect the distribution of individuals that select territories using heterospecific social information. Vocal mimicry means that males can learn elements of heterospecific songs and include them in their own repertoires. Complex songs indicate male quality and are regarded as attractive to females. The biodiversity of soundscape may describe the availability of song templates from different species. Inhabiting high-biodiversity sites may, therefore, increase individual vocal performance. We aimed to understand how the biodiversity of songbirds may shape the abundance and song structure of a mimicking bird, the marsh warbler *Acrocephalus palustris*. The complex songs of the marsh warbler contain a wide range of imitations of different species. We mapped the territories of the marsh warbler, recorded singing males, and counted other bird species. In 2021 we conducted the playback experiment broadcasting songs of different bird species within the chosen plots (increased biodiversity of soundscape). We have found significant differences between plots with heterospecific playback and control plots after the experiment – the abundance of the marsh warbler was lower under the heterospecific playback treatment. Study shows that the negative effect of increased competition outweighs the signal improvement benefits. This is the first study experimentally testing the relative effects of biodiversity on territory selection in bird species with vocal mimicry.

POSTER_2: **REPEATABILITY OF BEHAVIORAL REACTIONS OF GREAT TITS (*Parus major*) DURING CATCHING.**

Maria Berezantseva, Diana Polikarpova

St. Petersburg State University, St. Petersburg, Russian Federation

Great Tits *(Parus major*) were caught using automatic traps and ringed on the territory of the Summer Garden, St. Petersburg, from 2019 to 2022. 4 types of behavioral reactions were empirically identified during handling a bird: 1- the bird does not peck or give an alarm signal, 2- the bird pecks but does not give alarm, 3 - the bird pecks and gives 1 alarm signal, 4 - the bird pecks and gives alarm signals. The ratio analysis of behavioral reactions revealed the predominance of type 2. The distribution of 4 behavioral reaction types between primary and secondary catching did not differ significantly ($p = 0.1202$). There were no differences in the distribution of 4 types between males and females at the first capture. However, during secondary catching, significant differences were found between sexes in the distribution of 4 behavioral reaction types. In males, almost half of all cases were type 2, and in females, type 4 behavioral reactions were the most common. Females demonstrated a significant change in the ratio of behavioral reaction types during secondary capture compared to the primary ($p = 0.0004$). In birds of the first year of life, the distribution of 4 behavior types during primary and secondary catching did not differ significantly. The obtained results revealed a certain plasticity of behavioral reactions, which may be influenced by sex and life experience of the birds.

Final category: Bird strikes and aircraft safety

ORAL_5: **AVIATION SAFETY AND THE WHITE STORK (*Ciconia ciconia*) – CASE STUDY: FRAPORT GREECE KAVALA AIRPORT**

Dionysios Ntampakis[1], Michal Skakuj[2]

[1]FRAPORT GREECE, ATHENS, Greece. [2]WORLD BIRDSTRIKE ASSOCIATION, Warsaw, Poland

Birds and other wildlife can pose a direct and serious threat to aviation safety when intercepting aircraft flight paths. The White Stork (WS) *Ciconia ciconia*, weighting up to 4.4 Kg, is one of the species often involved in these bird strikes. Breeding pairs and immature birds gather in groups to hunt. Due to its large size and behaviour, the WS is one of the most hazardous species for aircraft operations. An aircraft strike with a white stork could lead to serious aircraft damage. Noteworthy, the WS is highly protected in the European Union. Kavala Airport "Megas Alexandros" (KVA) is one of the 14 regional airports managed by Fraport Greece. It is located very close to coastal lagoons, cultivated areas with water canals, and the wide strip of the Nestos River. KVA has therefore a high-risk profile regarding strikes with WS. To mitigate the risk, Fraport Greece implements numerous habitat management and bird control measures. Continuous improvement is an ongoing and long-term approach to improve processes and bring about innovative solutions to improve flight safety. Similarly, in Poland, where 1/5 of the world's WS population breeds, the habitat at military airports is modified and dogs are actively engaged in bird control. Therefore, aerodromes become less attractive to particular bird species. Collaboration between aviation and nature conservation experts is essential to ensure safe aircraft operations and the wellbeing of the protected species. This is especially important for countries with large WS breeding populations and mass migration.

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ORAL_6: **CONDUCTING WILDLIFE SURVEYS IN AND AROUND THE FRAPORT GREECE AIRPORTS**

Dionysios Ntampakis[1], Marianna Moira[2], Athanasios Tsiratzidis[3], Roula Trigou[4], Aris Manolopoulos[5]

[1]Wildlife Hazard Manager, Fraport Greece, Athens, Greece. [2]Wildlife Hazard Management Officer, Fraport Greece, Athens, Greece. [3]Wildlife Controller, Fraport Greece, Athens, Greece. [4]Senior Conservation Communication Officer, Hellenic Ornithological Society/BirdLife Greece, Athens, Greece. [5]GIS and Data Officer, Hellenic Ornithological Society/BirdLife Greece, Athens, Greece

Collisions between aircraft and wildlife constitute a problem with serious economic, environmental and safety implications. The Operations Division of Fraport Greece (FG) has the responsibility to provide a safe operating environment to aircraft operators. Each airport is unique in terms of landscape and wildlife and has its own Wildlife Hazard Management Programme. To assess the level of risk that each bird species poses to aircraft operations, FG has conducted wildlife surveys on and around the airports, in cooperation with the Hellenic Ornithological Society/BirdLife Greece. The habitat types have been assessed in terms of their attractiveness to hazardous wildlife species, on and off the airports up to a radius of 13km. Expert ornithologists and FG personnel visited 20-30 times each FG airport during 2018. From selected observation points for the point count surveys, data has been collected on bird species, their movements and behaviour, during various seasons, times of the day and weather conditions, including also the roost counts, when necessary. The results of this multidisciplinary survey include the bird species found at the areas of concern, their populations and movements in relation to the aircraft flight paths, the important bird attractant sites and proposed management measures for the most hazardous species and their habitat. This data is then combined with the airport bird strike data to perform the risk assessments per FG airport and launch biodiversity conservation initiatives, both for resident and migratory bird species.

Final category: Climate Change

ORAL_7: **PREDICTING THE IMPACTS OF CLIMATE CHANGE ON CAUCASIAN BLACK GROUSE, A NEAR THREATENED BIRD ENDEMIC TO THE GREATER AND LESSER CAUCASUS MOUNTAINS**

Masoud Yousefi

Ecology and Conservation Research Group (ECRG), Department of Environmental Sciences, Faculty of Natural Resources, University of Tehran., Karaj, Iran, Islamic Republic of

Mountain environments are subjected to above-average warming rates, and it is predicted that the distribution of some mountain dweller species will shrink considerably under the current scenario of fast-increasing climate change. Here, I assess its impact on the distribution of Caucasian Black Grouse (*Lyrurus mlokosiewiczi*), a Near Threatened high-altitude species which is endemic to the Greater and Lesser Caucasus Mountains. Since the species is a sky-island species, I hypothesized that a significant proportion of its habitat will be lost due to climate change. An ensemble approach using four distribution modeling methods: Generalized Linear Models, Generalized Additive Models, Maximum Entropy Modeling and Random Forest was applied to predict future distribution of the species across its distribution range. Model predictive performance was assessed using the area under the receiver operating characteristic curve (AUC). All models AUC and values were above 0.896. Results showed that under the predicted climate change scenario, suitability of the high elevation habitats will be reduced while low elevation habitats will become climatically suitable for the species. So, unexpectedly, climatically suitable habitats of the species will increase. This is not in concordance with my hypothesis that states that the species will lose a significant proportion of its suitable habitat under climate change. The species is predicted to shift its distribution downward, toward warmer and lower elevations.

ORAL_8: **PRONOUNCED CHANGES IN POPULATIONS OF BIRDS ON NORTHERN TAIMYR, SIBERIA, OVER 26 YEARS: AN EFFECT OF CLIMATE CHANGE?**

Anastasia Popovkina[1], Viktor Golovnyuk[2], Mikhail Soloviev[1], Maria Sukhova[1]

[1]Lomonosov Moscow State University, Moscow, Russian Federation. [2]"Taimyrsky Reserves", Norilsk, Russian Federation

Bird studies were carried out by an international expedition in northern Taimyr Peninsula, Russia, from 1990 to 1992. In June-August 2018 and 2019 we studied species composition and assessed the abundance of birds in the same area (field camp: 76°04'48" N 98°32'10" E). Mean monthly air temperatures in the period of our studies were noticeably higher than in the early 1990s; snow melted on 50% of the study area 7 to 23 days earlier than then. Nest density of birds was estimated on two sample plots in different habitats (119 ha on slightly elevated tundra and 20 ha on the flat hummock bog), the larger of them used also in 1990-1992. Additional counts of nesting and territorial monogamous waders, skuas, raptors, waterfowl and snowy owls were made within a 50 sq. km plot. Over two years, we recorded 58 species of birds, 29 of them nesting. It was, respectively, by 12 and 21.4% more than in 1990–1992. The abundance of the majority of nesting species increased, except for such high Arctic species as Turnstone (*Arenaria interpres*), Sanderling (*Calidris alba*), Red Knot (*C. canutus*), and Ptarmigan (*Lagopus mutus*). Decrease in their numbers, northward expansion of breeding ranges of such species as the White-fronted Goose (*Anser albifrons*), Dunlin (*Calidris alpina*), and Pectoral Sandpiper (*C. melanotos*), and increase in numbers of nesting Red Phalarope (*Phalaropus fulicarius*) could be related to the climate change. The reported study was funded by RFBR according to research project No. 18-05-70117.

ORAL_9: **CLIMATE FLUCTUATIONS AND THE EUROPEAN BEE-EATERS' NESTING IN TVER REGION (EUROPEAN RUSSIA)**

Andrei Zinoviev

Tver State University, Tver, Russian Federation. Higher School of Economics, Moscow, Russian Federation

The European bee-eater (*Merops apiaster*), a species seemingly sensistive to climatic fluctuactions, normally nests southof the Tver Region in Russia. Global warming in recent years caused bee-eaters to extend their breeding range over the territory of the Tver Region. Although migrating individuals had been observed therein even earlier (at the beginning of the previous century and again in the 1950s and 1990s), no breeding pairs had ever been observed. Especially hot recent years - namely 2013 and 2017 - caused several pairs of bee-eaters to nest in Tver Region. Here they displayed their regular habitat preferences. Nests were constructed in the holes dug in vertical Shosha-river banks, the right tribute of Volga-river. Both years at least four offsprings were successfully raised. One of the main reasons for breeding bee-eaters to migrate further north was food availability. Both years were characterized by an increased number of hymenopterans, the major food item for bee-eaters. Highly attracted by the hymenopterans that made their holes in the very same banks, bee-eaters were even neutral to apiaries in villages nearby. Besides 'wild hymenopterans' they preyed upon dragonflies and maybugs.

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ORAL_10: MODERN TRENDS IN THE DYNAMICS OF AVIFAUNA ON KOLGUEV ISLAND IN THE EUROPEAN RUSSIAN ARCTIC

Petr Glazov[1], Julia Loshchagina[1], Alexander Kondratyev[2], Helmut Kruckenberg[3], Elmira Zaynagutdinova[4], Olga Pokrovskaya[5], Yury Anisimov[6]

[1]Institute of Geography, Russian Academy of Sciences, Moscow, Russian Federation. [2]Institute of Biological Problems of the North, Far Eastern Branch of the Russian Academy of Sciences, Magadan, Russian Federation. [3]Institute for Wetlands and Waterfowl Research, Verden, Germany. [4]Department of Vertebrate Zoology, Faculty of Biology, Saint Petersburg State University, St. Petersburg, Russian Federation. [5]Arctic Research Station, Institute of Plant and Animal Ecology, Russian Academy of Sciences, Labytnangi, Russian Federation. [6]Baikal branch of the Russian Society for Conservation and Study of Birds (BirdsRussia), Irkutsk, Russian Federation

Kolguev Island is located in the Pechora Sea, the European part of the Russian Arctic. The ecosystem of the island is unique due to the total absence of rodents. The avifauna of Kolguev currently numbers 113 bird species, of which 58 are nesting. The absence of rodents and a relatively stable predation pressure resulted in a high abundance of many bird species: Willow Grouse, geese (White-fronted Goose, Bean Goose and Barnacle Goose), some waders (Dunlin) and passerines (Lapland Bunting, Meadow Pipit). During the 125-year history of ornithological studies on Kolguev, the island avifauna has changed significantly. The trend towards an increase in the proportion of widespread and Siberian species while a decrease in the proportion of Arctic species was observed. Thorough monitoring of Kolguev avifauna has been carried out since 2006. During this period, the dynamics of the population density of 36 bird species were traced. The abundance of some waders (Grey Plover *Pluvialis squatarola* and Dunlin *Calidris alpina*) decreased as well as Lapland Bunting (*Calcarius lapponicus*), while the numbers of Barnacle Goose (*Branta leucopsis*) increased sharply since the 1980s. The breeding density of Rough-legged Buzzard (*Buteo lagopus*) also increased in recent years. The long-term monitoring of Kolguev ecosystems has indicated the high international conservation value of the island due to the high breeding density of many bird species. Our study presents a unique case of monitoring a lemming-free ecosystem, examples of which are quite rare in the Arctic. The collection and processing of field material was supported by the Russian Science Foundation Grant No. 22-17-00168, https://rscf.ru/project/22-17-00168/.

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POSTER_3: THE INFLUENCE OF LOCAL AND GLOBAL WEATHER CONDITIONS ON THE REPRODUCTIVE TIMINGS OF THE COMMON GULL (*Larus canus*), THE CASPIAN TERN (*Hydroprogne caspia*), AND THE PALLAS'S GULL (*Larus ichthyaetus*)

Elvira Tishchenko[1,2,3], Ivan Frolov[1,2,3], Maria Garyushkina[1], Marina Selivanova[1]

[1]Institute of Systematics and Ecology of Animals, Novosibirsk, Russian Federation. [2]Novosibirsk State University, Novosibirsk, Russian Federation. [3]Institute of Zoology, Almaty, Kazakhstan

While the photoperiodic regulation of gonad development and reproductive timings is a well-acknowledged phenomenon in most avian species, emerging evidence indicates that ambient temperature can exert a significant influence on these processes in birds. Prior investigations have revealed a correlation between reproductive timing and meteorological conditions, particularly in the context of the common gull. Weather parameters are known to indirectly modulate reproductive timings by impacting food resource availability during the crucial reproductive phase. We chose three representative gull species to investigate this hypothesis. We employed generalized linear models to evaluate the correlation between the median egg-laying date and regional weather parameters. Our analysis encompassed variables such as average daily air temperature, wind speed, precipitation levels, atmospheric pressure, along with global teleconnection climate indices including the North Atlantic Oscillation (NAO), Scandinavian Index (SCAND), and East Atlantic – Western Russia Pattern (EAWR). Our investigation unveiled diverse relationships between local and global weather parameters across all model species. Among these variables, atmospheric pressure emerged as the primary determinant of clutch initiation periods in all three species. Notably, positive monthly NAO values

in may expedited reproduction in common gulls and Pallas's gulls (*Ichthyaetus Ichthyaetus*) while postponing it in Caspian terns (*Hydroprogne caspia*). The divergent effects of weather on these species can be attributed to variations in food availability. Pallas's gulls exhibit a greater dependency on food resources compared to the other two species, which can provoke distinct responses to weather conditions. The study was supported by the Federal Fundamental Scientific Research Program (FWGS-2021-0003).

Final category: Collision with obstacles

ORAL_15: **PRELIMINARY RESULTS OF LONG-TERM MONITORING STUDY FOR PERSISTENT POLLUTANTS RESIDUES AT THE FEATHER OF COMMON KESTREL (*Falco tinnunculus*) IN TÜRKIYE**

Kalender Arikan, Salih Levent Turan

HACETTEPE UNIVERSITY, FACULTY OF EDUCATION, DEPARTMENT OF BIOLOGY EDUCATION, ANKARA, Turkey

The Common kestrel (*Falco tinnunculus*), a common bird species in Turkey, frequently prefers rural habitats shaped by human for breeding and feeding. This situation increases the death rate of the kestrel due to anthropogenic causes (I.e., collisions with electricity transmission lines, highways, wind turbines and buildings). In this research, we collected feathers of kestrels (N = 46) that died due to anthropogenic effects in 5 geographical regions and 4 different habitat types of Türkiye from which residues of organochlorine pesticides (OCPs) and polychlorinated biphenyls (PCBs), which are persistent organic pollutants, had been previously analysed. The study results show that although total persistent organic pollutant residues (POPs) vary according to habitat type ($p<0.05$), it does not differ according to regions. This shows that POPs residues are in significant amounts throughout Türkiye. The results of the study are important in terms of conserving the kestrel populations and monitoring environmental pollution. Investigating the effects of POPs residue on the reproductive success and physiology of the species in future studies will enable the current situation to be fully revealed.

Final category: Conservation

ORAL_11: **STATUS OF BREEDING SEABIRDS ON THE MEDITERRANEAN COAST OF EGYPT FROM**

Mohamed Habib

Red Sea Association Environment, Cairo, Egypt

I undertook surveys on the Mediterranean coast of Egypt between 2012 and 2018 to assess the status of breeding seabirds. The two breeding populations of Slender–billed gull *Larus genei* hosted 45 375 individuals, representing 32% of the estimated regional breeding population. Conversely, only 15 empty nests were found at Egypt's only known breeding colony of Yellow-legged Gull *Larus michahellis*. I counted 92 occupied nests of Gull-billed Tern *Gelochelidon nilotica*, over 950 nests of Sandwich Tern *Sterna sandvicensis* and 670 breeding pairs of Common Tern *Sterna hirundo*. Port Said is an important nesting area for Little Terns *Sternula albifrons* in the Middle East with over 3955 breeding pairs, representing more than 6% of the current Black Sea and Mediterranean breeding population. Disturbance from landfilling and modification of the seashore by the gas industry, tourism resorts and the building new ports together with the collecting of eggs and chicks are the main threats affecting breeding seabirds on the Mediterranean coast of Egypt.

ORAL_12: **DIGITAL STATUS OF NORTHERN BALD IBISES IN 2016-2019 AND PROBLEM-SOLUTION SUGGESTIONS**

Ahmet Kılıç

Dicle University Vocational School of Technical Sciences, Diyarbakır, Turkey

The Northern Bald ibis (*Geronticus eremita*) is an endangered species that experienced a sharp global decline. The last free-living individual in Turkey was seen in 1989 in Birecik (Sanliurfa). Captive breeeding to rescue this species from the brink of extinction started in 1977 and is still ongoing. In 2016, the number of Northern Bald ibises was 217; one year later 242. In 2018, 281 birds were counted, and the following year 253 captive individuals were available. Northern bald ibises have great breeding potential (it was determined that they laid more than 200 eggs in 2019 producing 116 hatchlings), yet dozens of eggs and chicks are lost each year. Various problems have been identified in feeding, cages, warming, incubation and breeding period. Further research is needed to tackle these problems and enable northern bald ibis to establish self-sustaining and viable wild populations.

ORAL_13: **IMPACTS OF THE EU TRADE BAN IN THE WILDLIFE TRADE NETWORK AND ITS CONSEQUENCES TO GLOBAL INVASION PATTERNS**

Luís Reino, Miguel Porto

BIOPOLIS/CIBIO, Lisboa, Portugal

The global wildlife pet-trade is a major pathway for the widespread introduction of invasive alien species (IAS). Yet, the precise mechanisms through which wildlife trade impacts the risk of invasions extend beyond the transportation of individuals to novel areas, thus remaining largely unknown. In this study, we examine how the global wildlife network involving wild-caught avian species was impacted by the European Union (EU) ban established in 2005 due to concerns related to the avian flu. To do this we will use data from the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) comparing how the EU-ban impacted the importation of wild-caught birds before (up to 2005) and after the ban (up to 2021) at the national and global level, and how country-level socio-economic factors affected those impacts. Considering previous studies from the team, we expect major trade impacts in the EU, with a decrease in the likelihood of new invaders. However, and due to EU restrictions, new trade routes and demand needs are being diverted often to sub-tropical and tropical regions, which may pose major threats to biodiversity in those regions.

ORAL_14: **STATUS OF THREATENED BIRDS IN SAUDI ARABIA**

Mohammad Zafarul Islam

Saudi Aramco, Dhahran, Saudi Arabia

Saudi Aramco has an important role to play in protecting birds in the Kingdom of Saudi Arabia, where over 550 species have been recorded and 362 have their population trend assessed in the book 'Birds of Saudi Arabia' published by Saudi Aramco in 2020. Concernedly, 52 species are declining, 19 are considered globally threatened and 24 near-threatened. In addition, two of these species are Critically Endangered, namely the Sociable Lapwing (*Vanellus gregarius*), presently found in multiple localities, and the Slender-billed Curlew (*Numenius tenuirostris*), which has not been recorded over the last 30 years. Considerably, one of the most threatened species is the Asir Magpie (*Pica asirensis*) endemic to the south-western highlands (Asir mountains). Saudi Aramco is supporting research to deepen the knowledge of this species' ecology, thus assisting in managing its few dwindling populations and its fragmented habitats. Four species may already be extinct within the country, namely the Arabian Bustard (*Ardeotis arabs*), Bateleur (*Terathopius ecaudatus*), Bearded Vulture (*Gypaetus barbatus*) and Northern Bald Ibis (*Geronticus eremita*) as assessed in the 'Birds of Saudi Arabia' in 2020. In line with the Vision 2030, Saudi Aramco's overarching Biodiversity Protection Policies include the promotion of habitat and species conservation through CP-45, where birds are protected from an array of threats present in the wider landscape (GI:430.003). Saudi Aramco conserve threatened and unique avifauna through its conservation policies by implementing effective conservation measures and raising public awareness, establishing Biodiversity Protected Areas (BPAs) to ensure survival of threatened birds and keeping the common birds common.

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POSTER_4: **MAPPING OF LEASED HUNTING LOTS IN MOROCCO: A PRELIMINARY STEP FOR STUDYING THE LANDSCAPE EFFECT ON THE SELECTION OF NESTING SITES BY THE BARBARY PARTRIDGE (*Alectoris barbara*).**

LAILA SABRATE[1], Saâd Hanane[2], Mohamed Bouaamama[3], Najib Magri[2], Abdelaziz Benhoussa[1], Abdellah Ichen[1]

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The use of Geographic Information System (GIS) is being increasingly employed for wildlife monitoring. In the present study, we utilized this tool to characterize the nesting habitats of a game species, the Barbary partridge (*Alectoris barbara*), in three leased hunting lots. Supervised classification was performed on Sentinel-2 satellite imagery using the Semi-Automatic Classification Plugin (SCP) in QGIS to establish land cover maps of the leased lots in Sidi Boukhalkhal, Sidi Kacem, and Souk Larabaa. Additionally, a search for the nests of this game species was conducted between April and June. Land cover maps of the three leased lots were developed, and a total of 44 nests were located and georeferenced (19 in Boukhelkhel, 8 in Sidi Kacem, and 17 in Souk Larbaa). The resulting cartographic support will be utilized to extract variables related to landscape composition and configuration (buffer zones), which will be considered as covariates for identifying the determinants of the probability of Barbary partridge nest presence in the three leased hunting lots.

POSTER_5: **ASSESSMENT OF THE CURRENT STATUS OF THE STRIPED PALLID SCOPS OWL (*Otus brucei*) IN BIRECIK/URFA BREEDING AREA**

Özdemir Adizel[1], Ilhami Kiziroğlu[2], Erkan Azizoğlu[3]

[1]Van 100.Year University, Van, Turkey. [2]Technical University of OSTIM, Ankara, Turkey. [3]Hakkari University, Hakkari, Turkey

The Pallid Scops Owl (*Otus brucei*) is a species distributed in Asia. Its spread in Turkey is possible in the south, close to the Syrian border. It is recorded in the provinces of Gaziantep, Şanlıurfa, Diyarbakır and Batman, reaching the surroundings of Aleppo and Raqqa in Syria. The change in the initial distribution of the species dates back to the recent past. More precisely, as a result of global warming, it expanded to both the north and the south of Turkey. Although it has been observed as a summer visitor in a few provinces in Turkey, its breeding area is a small grove known as Söğütlük Park, located along the Euphrates River in Birecik district. The size of this area is approximately that of a football field; the presence of old Euphrates Poplar (*Populus euphratica*) trees with cavities for nesting is crucial for breeding. Provided that human and pet pressure in the area is high, the real problem is the idea of rejuvenation or cutting down old Euphrates poplar trees in other people's parks. Reports on this issue are taken into consideration from time to time. Touching these trees will cause the species to leave its area. The Euphrates poplar is one of the rare species that should be protected. Listed as Endangered by the IUCN, it is categorized as Least Concern by Turkish authorities. We call for a higher protection being granted by national authorities to this key arboreal species.

Final category: Ecology

ORAL_16: **RECENT CHANGES IN THE ABUNDANCE AND SPATIAL DISTRIBUTION OF GEESE IN SOUTHERN EUROPEAN RUSSIA**

Natalia Lebedeva

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The study area is located in the Western part of Kumo-Manych depression (the greylag goose breeding area, and a migratory stopover of Arctic geese). We investigated the seasonal distribution of graylag geese from the local population tagged by GPS-GSM transmitters (Ecotone). Censuses (greylag, red-breasted and white-fronted geese) were carried out year-round. It has been established that the drought and subsequent frosts in 2021 affected feeding resources and autumn aggregations of Arctic migrants. The number of Arctic geese has halved. Resent years the number of red-breasted geese began to increase in autumn. About 5,000 individuals stayed in the area until the end of December 2022. Then they stayed in the rice fields in the Kuban Delta (until January 10,). Greylag geese changed their traditional molting area (northern Kalmykia) in 2022 due to unfavorable conditions (drought, reed burnout). Non-breeding geese molted for the first time in the Volga delta and Azov wetlands. Greylag geese never migrated to remote wintering areas (Iran, Iraq) after 2014. The “Manych” population of this species wintering in the Azov wetlands is subject of disturbance and elimination, which is associated with the extension of the hunting period until the end of January. Part of the geese wintered on the Kerch Peninsula the first time 2023, where this species is protected. Consequently, climate warming, combined with anthropogenic factors have led to changes of spatial distribution and abundance of geese. The study is support by MMBI RAS and SSC RAS projects with LLC Argamak-R assistance.

ORAL_17: **THE DYNAMICS OF ABUNDANCE OF NESTING WADERS AND STRUCTURE OF THEIR COMMUNITIES ON THE TAIMYR PENINSULA, SIBERIA**

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Populations of Arctic Waders (*Calidris canutus*) were monitored in 1994-2017 in three different tundra regions on southeastern (72°51' N, 106°04' E), central (74°09'N, 99°34'E), and northwestern (73°21' N, 80°32' E) Taimyr Peninsula. Nesting densities, annually assessed on sample plots in different habitats, greatly varied from year to year. The structures of wader communities were more similar in similar habitats of different regions than in different habitats of the same region. The abundance of nesting waders and variation of this parameter were the highest in floodplain habitats and the lowest on watersheds. Over the study period on southeastern Taimyr (1994–2014), we revealed a long-term tendency of decrease in abundance of nesting waders on watersheds and its increase on floodplains, mostly on the behalf of respective changes in populations of the Pectoral Sandpiper (*Calidris melanotos*) and Red Phalarope (*Phalaropus fulicarius*). The abundance of the Little Stint (*Calidris minuta*) declined significantly everywhere. These tendencies were related to climate warming leading to risingspring temperatures, the shift of snowmelt and flooding to earlier dates and, hence, earlier availability of nest sites suitable for waders in floodplain habitats. The reported study was funded by RFBR according to the research project No. 18-05-70117.

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ORAL_18: **SMALL THINGS ARE IMPORTANT. THE SCALE-DEPENDENT ASSOCIATION BETWEEN BIRD DIVERSITY AND SINGULAR POINT ELEMENTS IN FARMLAND DIFFERING IN MANAGEMENT INTENSITY**

Sylwia Pustkowiak[1,2], Zbigniew Kwieciński[3,4], Magdalena Lenda[1], Michał Żmihorski[5], Piotr Skórka[1]

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Farmland birds are biodiversity indicators, but their numbers are declining across Europe. Singular point elements in a landscape (SPEL; e.g., singular trees, shrubs, chapels, pylons) provide basic resources for different species, thus may increase bird diversity. We assessed the associations between the number and types of SPEL and bird diversity and species composition at two spatial scales in agricultural landscapes differing in management intensity. We counted birds in two regions: southern Poland (SouthPL, less intensive management) and western Poland (WestPL, more intensive management), and at two spatial scales: landscape (1 km2 squares) and point scale (near the selected SPEL). At the landscape scale, species richness was positively associated with the number of SPEL in SouthPL, but not in WestPL. Ordination analysis showed that pylons and trees in SouthPL and shrubs, pylons, and piles of manure in WestPL contributed the most to the species composition. At the point scale, more species with higher abundance were found next to the trees, pylons, shrubs, and chapels than at the reference points in both regions. Ordination analysis at this scale showed that trees and chapels in SouthPL and chapels in WestPL contributed the most to the species composition. This is the first empirical evidence of an association between SPEL numbers, types, and farmland bird populations. SPEL is positively associated with bird diversity at the local scale but is less obvious at the landscape scale. Maintaining or planting SPEL may be a low-cost measure to increase local bird diversity in European farmlands.

ORAL_19: **CURRENT SITUATION OF BREEDING BIRD SPECIES IN THE GEDIZ DELTA, TURKEY**

Şafak Arslan[1,2], Ahmet Kaya[3], Adem Akyol[1], Mehmet Kaya[1,4], Özge Yaylalı[1]

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Breeding bird atlas studies are concerned with the presence and abundance of bird species in a particular geographical area. Gediz Delta, one of the most important wetland ecosystems in the Mediterranean, also is one of the most important areas for birds in Turkey. Therefore, it carries particular importance for scientific research. Extensive breeding data for the delta in 2002, 2006 and 2020 were obtained from the previous atlases. In this study, we aimed to conduct again an atlas study to determine the current breeding bird species, distributions, changes over the years, and threats by using the point counting method in parallel with the previous censuses. The study was carried out on 294 UTM frames. Observations were made for 10 minutes at the predetermined points representing different habitats. A total of 113 species were determined from 48 families throughout the study. Among them, three species are classified as near endangered and two as Vulnerable, according to the International Union for Conservation of Nature. An additional 32 species are categorized as possible breeding, 34 species as probable breeding, and 47 species as confirmed breeding according to international breeding codes. In addition, threats such as pollution, poaching, industrialization, urbanization, irrigated agriculture, garbage and rubble dumping were determined in the delta. Intense human activity has also been observed, adversely affecting bird species' foraging and reproduction. Nevertheless, an increase was observed in the number of bird species breeding in the delta. This may suggest that breeding bird species could increase further by eliminating threats and implementing restoration works.

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ORAL_20: **FROM WINTER TO BREEDING SEASON: A CLOSE LOOK AT AVIAN ENERGY ALLOCATION IN GREAT TITS**

Cesare Pacioni[1], Marina Sentís[1], Catherine Hambly[2], John R Speakman[2,3], Anvar Kerimov[4], Andrey Bushuev[4], Luc Lens[1], Diederik Strubbe[1]

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Understanding how birds annually allocate energy to cope with changing environmental conditions and physiological states is a crucial question in avian ecology. There are several hypotheses to explain species' energy allocation. One prominent hypothesis suggests higher energy expenditure in winter due to increased thermoregulatory costs. The "reallocation" hypothesis suggests no net difference in seasonal energy requirements, while the "increased demand" hypothesis predicts higher energy requirements during the breeding season. Under the aerobic capacity model of endothermy, birds adjust the mass and/or metabolic intensity of their bodies in ways that are consistent with expected cold- and/or activity-induced costs. Here, we look for metabolic signatures of seasonal variation in energy requirements of a resident passerine of a temperate-zone (great tit, *Parus major*). To do so, we measured whole-body and mass-independent basal (BMR), summit (M_{sum}), and field (FMR) metabolic rates during winter and during breeding in Belgian great tits. We also assessed whether, and to what extent, metabolic rates conformed to the predictions of the aerobic capacity model. Our result did not support the aerobic capacity model. Breeding season showed a 10% higher whole-body BMR and FMR compared to winter, while M_{sum} had a 7% decline from winter to breeding. Mass-independent metabolic rates showed a 10% increase in BMR and a 7% decrease in M_{sum} from winter to breeding. We argue that these modest seasonal changes are consistent with the relatively mild winter temperatures recorded during our study period and that the reallocation hypothesis is more closely aligned with our findings.

ORAL_21: **CHECKLIST OF AFROTROPICAL BIRD SPECIES OBSERVED IN THE SAHARA OF ALGERIA.**

Boulaouad Belkacem Aimene[1,2], Harzallah Bachir[2], Missoum Mohamed[2], Ayyache Khaled[2], Yahiaoui Halima[1,2]

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Efforts to uncover the avifauna in the southernmost reaches of Algeria have been primarily focused on the Sahara desert and the largely unexplored Timiaouine region in particular. Notably, the African Collared Dove (*Streptopelia roseogrisea*) was documented for the first time in Algeria. Moreover, 17 of the recorded Afrotropical bird species (*Clamator jacobinus*, *Pterocles exustus*, *Oena capensis*, *Urocolius macrourus*, *Merops albicollis*, *Dendropicos elachus*, *Eremopterix nigriceps*, *Eremalauda dunni*, *Spiloptila clamans*, *Lamprotornis pulcher*, *Cercotrichas podobe*, *Passer griseus*, *Vidua chalybeata*, *Amadina fasciata*, *Porphyrio alleni*, *Ploceus vitellinus*, *Ploceus cucullatus*, *Butorides striata* and *Corvus albus*) deserve special attention either due to their recent first observation or rarity within the extreme southern region of Algeria.

ORAL_22: **UNRAVELLING THE DRIVERS OF THE RED-BACKED SHRIKE (*Lanius collurio*) BREEDING DISTRIBUTION IN EURASIA**

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The study of species distribution ranges and more specifically species range margins (or edges) is of great significance in both ecology and biogeography. First, species range margins are a result of how far the species ecological requirements are in equilibrium with properties of the environment. Second, conditions at the distribution boundaries may better discriminate between favorable environmental conditions for a given species and those that are not. Third, although ecological processes at the margins may prove complex (e.g., altitude, species assemblage), they frequently underlie stronger responses to environmental factors than near the range centre. Here, we address these issues by modeling the distribution of the red-backed shrike (*Lanius collurio*), a Palearctic species with an extensive breeding distribution range in Eurasian, spanning from the Iberian Peninsula to central Asia, mainly wintering in sub-Saharan Africa. We aimed at comparing the environmental drivers that mediate the distribution of this species in Iberia, which has a mostly northern distribution with population isolates in central Iberia. To do so, we applied species distributions models, through a model ensemble approach, using its vast Eurasian breeding distribution and comparing the results to actual distribution data for the Iberian Peninsula obtained from the second European breeding bird atlas and citizen science data from the Global Biodiversity Information Facility (GBIF). The final model predicted that the distribution is restricted to the northern and centrals parts of the peninsula, congruent with the observed range.

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ORAL_23: **CAN AN INCREASE IN THE NUMBER OF BARNACLE GEESE LEAD TO A COMPETITION WITH OTHER GOOSE SPECIES ON BREEDING GROUNDS?**

Julia Loshchagina[1], Petr Glazov[1], Olga Pokrovskaya[2], Yury Anisimov[3], Elmira Zaynagutdinova[4], Alexander Kondratyev[5], Helmut Kruckenberg[6]

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Russian barnacle goose (*Branta leucopsis*) population has increased dramatically since the 1980s. In our study area, Kolguev Island (European Russian Arctic), characterized by an exceptionally high abundance of nesting geese, the most numerous goose species used to be white-fronted goose (*Anser albifrons*). However, in the recent decade, Barnacle geese have rivalled in numbers. First nesting on sandbars in the southern and eastern parts of the island, Barnacle geese have now expanded throughout the inland, occupying a wide variety of nesting habitats. As a result, Barnacle geese may compete with white-fronted geese, since the two species use the same habitats for nesting, rearing goslings and moulting. To test whether this interspecific competition occurs, we analyzed the breeding density and nesting success in the proximity of the largest known barnacle goose colony in the Peschanka River delta and in the central part of the island, where barnacle geese nests are more scattered. In 2006-2023, the nesting density of white-fronted goose decreased in the Peschanka Delta area, while an upward trend has been detected in the central part of the island. A spatial

analysis of nest locations for the two species in the same study plots showed that white-fronted goose nests were not randomly distributed; rather, a clear avoidance pattern emerged with respect to barnacle goose nests. This corroborates the hypothesis that the dispersal of barnacle goose throughout the island may lead to a redistribution of white-fronted goose nests. The work was supported by RSF grant No. 22-17-00168, https://rscf.ru/project/22-17-00168/.

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POSTER_6: **DIVERSITY AND ABUNDANCE OF FAUNA IN THE NESTS OF (*Ciconia ciconia*) IN THE URBAN ENVIRONMENT OF TÉBESSA (NORTHEAST OF ALGERIA)**

Linda Bouguessa- Cheriak[1], Maroua Habes[1], Faiza Marniche[2], Slim Bouguessa[1]

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Bird nests host an abundant and varied invertebrate fauna that can have serious consequences on the host by reducing its survival and reproductive success. In Algeria studies on these communities are still in their infancy and for this reason we made a contribution to fill this gap of knowledge. This study was carried out in an urban area at Tebessa region during the white stork breeding period in 2019. Nest samples were collected and analyzed by Berlese device. We identify an arthropod fauna belonging to several ecological categories: decomposers, predators, pathogenic agents and insect transporters within the framework of phoresia. In terms of diversity, we found species belonging to Arachnida, Insecta, Collembola and Chilopoda classes; insects accounted for 40% of total diversityand Arachnida for the 30%. Among (10) orders listed, Mesostigmata was the most diverse (32%) by hosting10 families and 23 species. Arachnida (76, 51%) was the most abundant phylum. Mesostigmata was more abundant (51.28%) than other orders Poduromorpha (22.73%) and Sarcoptiforma (21.79%). Urodinidae was the most abundant family (29.37%) and *Podura* sp. the most abundant (21.80%) species.

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POSTER_7: ESTIMATING THE WORLD'S COMMON BUZZARD'S *Buteo buteo* POPULATION BY CONVERSION OF RELATIVE DENSITY TO ABSOLUTE DENSITY.

Andreas Skibbe[1], Marcin Pakuła[2], Andrzej Batycki[1], Artur Goławski[3], Ewa Karcz[1], Tomasz Knioła[1], Bogusław Kotlarz[1], Karol Lorek[1], Dorota Mikołajko-Opulska[1], Michał Przystański[1], Leszek Stankiewicz[1], Mateusz Szymański[1], Victoria Takacs[4], Marek Ziółkowski[1]

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Estimated bird population sizes in large areas are often inaccurate and fraught with a big error. Therefore, it is important to revise the current and search for new methods of estimating. In the case of common buzzard's nominative subspecies, the global population is estimated at 600000 (average absolute density = 11.3 territories/ 100km²). During field surveys, we collected counting points samples. Then we used this data to calculate the relative density (number of individuals/point/100% visible space). We also counted territories to establish absolute density (number of territories/100 km²). Those numbers allowed us to calculate the correlation coefficient between the relative and absolute density. The average correlation coefficient was 18. From 2005 until 2019 we made approximately 1700 counting points observations across Europe. The weighted average relative density for the total range of nominate subspecies was 0.56 individuals/ point/ 100% visible space. This corresponds to an average absolute density 10.1 territories/ 100km² (0.56 x 18 = 10.1). The global population determined in this way was 574,200 territories. This number is similar to the one described in the literature. However, in some regions, population size is significantly underestimated. The presented method is a less time-consuming alternative to the traditional approach. It can be especially useful during studies on large, poorly researched regions or in case of difficult to observe species such as European honey buzzard *Pernis apivorus* or short-toed snake eagle *Circaetus gallicus*.

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POSTER_8: **ESTIMATING THE SHORT-TOED SNAKE EAGLE *Circaetus gallicus* POPULATION ON LARGE SURFACES BY CONVERSION OF RELATIVE DENSITY INTO ABSOLUTE DENSITY.**

Andreas Skibbe[1], Marcin Pakuła[2], Artur Goławski[3], Mateusz Szymański[1], Victoria Takacs[4]

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Between 2004 and 2019, in selected countries where short-toed snake eagle (*Circaetus gallicus*) is present, we collected approximately 1,500 counting points samples. The study covered an area of more than a dozen large South European regions (such as Andalusia in Spain and the Central Massif in France). Relative density was determined as the number of individuals/ point/ 100% visibility. It ranged from 0 to 0.48. In most regions in the Mediterranean (i.e. Greece, south Croatia, Spain, west Turkey, and south France), relative density was similar. On smaller regions with known short-toed snake eagle absolute density (such as the Central Massif), we calculated the correlation coefficient between the above-described relative and absolute number. Correlation coefficient and relative density were used to calculate the average absolute density (number of territories per 100km2) for each region. Comparing these average absolute densities against literature data indicates that in most regions the short-toed snake eagle density population is significantly underestimated. This applies, for example, to Greece and Turkey.

POSTER_9: **TRAIL CAMERAS IN PREDATOR-PREY STUDIES IN THE RUSSIAN ARCTIC**

Anastasia Popovkina, Mikhail Soloviev

Lomonosov Moscow State University, Moscow, Russian Federation

Trail cameras Bushnell Trophy Cam XLT were used in 2012–2019 on SE, N, and NW Taimyr, Siberia, to study the impact of predators on wader nesting success. Over 8 seasons, cameras were placed near 75 wader nests (*Calidris melanotos* – 35, *C. minuta* – 31, *C. alpina* – 5, and *Phylomachus pugnax* – 4) and 202 artificial nests with eggs of *Coturnix coturnix*. Cameras were placed 2–3 m away from nests; they had no effect on incubating birds (only 3 nests were abandoned). In the tundra, cameras undoubtedly attract both terrestrial and avian predators: the former could detect them by smell, whereas the latter seem to be interested in the novel objects. In many cases, predators visited cameras not once, marked and even tried to destroy them, but the nests remained intact. Automatic photo registration allowed identification of predator species and assessment of precise time of their visits, *i.e.*, the rate of depredation in different habitats and in the seasons with different abundance of alternative prey (lemmings). The use of trail cameras revealed shortcomings of evaluation of the predator pressure by assessment of predators' abundance and activity on sample plots: the occurrence of Arctic foxes during such surveys/counts does not adequately reflect their effect on nesting success. Specific marks left by predators are not always representative for their identification: cameras not once registered Arctic foxes marking nests already depredated by skuas. The reported study was funded by RFBR according to the research project No. 12-04-01526, 17-04-02096, 18-05-70117.

POSTER_10: **IMPACT OF THE NEST LOCALIZATION ON JUVENILE WHITE STORK *Ciconia ciconia* WHITE BLOOD CELL COUNTS**

Anna Nehring-Rupińska, Mariusz Kasprzak, Mateusz Ciepliński, Piotr Kamiński, Leszek Jerzak

Institute of Biological Sciences, University of Zielona Góra, Zielona Góra, Poland

The aim of the study was to determine if white blood cells (WBC) of juvenile white stork (*Ciconia ciconia*) from breeding colony ("k") differs from the ones developing in single nests ("p"). Fieldwork was conducted in western Poland. Higher WBC count observed in birds from single nests is most probably induced by the organism response to more pathogens in these nests. Simultaneously higher lymphocyte count in these nestlings proves acquired immunity reaction intensification. Morphologically indistinguishable white blood cells - T and B lymphocytes - are responsible for the specific acquired immunity that juvenile storks gained during their development. The role of eosinophils in birds is still unclear. It can be assumed by analogy to mammals that the higher number of eosinophils in storks from single nests is a reaction to parasites (internal or external), which most likely were more abundant in this environment. Statistically insignificant differences in heterophil and lymphocyte counts indicate sufficient innate immunity level enabling the development of birds both in colony and single nests. Obtained results show that nestlings developing in colonies encounter better (easier) development conditions. No major differences in the examined stork breeding success were observed, which indicates that the white stork WBC system physiological development mechanisms are sufficient to compensate for environment diversity.

POSTER_11: **DIVERSITY OF THE BIRD FAUNA DURING THE MIGRATION TIME IN THE JIJIA - IASI WETLANDS, ROMANIA (RAMSAR 2422)**

Iulian Fomici, Valentin Mihalescu, Andi Romila, Carmen Gache

"Al. I. Cuza University" from Iasi, Iasi, Romania

Our study presents data on the diversity of bird fauna during the period of migration on the territory of Jijia - Iasi Wetlands, Romania (Ramsar 2422). The monitoring activity followed the bird fauna in the confluence area of Jijia River with its tributaries Miletin and Jijioara Rivers, on the territory of two reservoirs (Halceni and Bulbucani), and of the ponds of Jijia, Miletin and Jijioara Rivers. We performed field research monthly over one year (March 2022 – February 2023). We identified 153 bird species, with 145 being recorded during the spring and autumn migration. We present quantitative data also. Waterfowl (*Anser albifrons*, *Anas platyrhynchos*, *Aythya ferina*, *Fulica atra*) were dominant in terms of diversity and abundance in the area, but we mention significant presence of wader species (*Calidris pugnax*, *Limosa limosa*, *Recurvirostra avosetta*, *Vanellus vanellus*) and some passerine birds (*Riparia riparia*, *Hirundo rustica*, *Locustella luscinioides*, *Acrocephalus* sp.). We recorded 42 bird species included in Birds Directive Annex 1, of which 32 listed in the Romanian Red Book of Vertebrates. We highlight the presence of seven critically endangered species (*Anser erythropus*, *Tadorna ferruginea*, *Pelecanus crispus*, *Haliaeetus albicilla*, *Aquila heliaca*, *Clanga clanga*, *Milvus migrans*) in this territory. corresponding author e-mail: iulianfomici@gmail.com

POSTER_12: **ASPECTS OF THE BREEDING SEASON OF BIRD FAUNA IN THE JIJIA - IASI WETLANDS, ROMANIA (RAMSAR 2422)**

Valentin Mihalescu, Andi Romila, Iulian Fomici, Carmen Gache

"Al. I. Cuza University" from Iasi, Iasi, Romania

Our ornithological study presents data regarding the breeding season of bird fauna on the territory of Jijia - Iasi Wetlands, Romania (Ramsar 2422). We began our study in March 2022, monthly until May 2023, monitoring the bird fauna on the territory of ponds from Larga Jijia and Vladeni villages, reservoirs Halceni and Bulbucani, the ponds from Jijioara River (Larga Jijia – Potangeni – Malaiesti – Forasti - Gropnita) and its tributary Pais River (Focuri – Coarnele Caprei). We recorded 153 bird species, 96 of which being regular breeding species in the area and four being probably breeding species in the Jijia Wetlands. The suitable habitats cover significant surfaces in the investigated perimeter, but the water level experienced large oscillations with high impact on the breeding bird fauna during our study. We identified 42 bird species included in Birds Directive Annex 1, of which 23 breeding species in the area, and an additional 42 listed in Annex 2. We also recorded the presence of 32 bird species included in the Romanian Red Book of Vertebrates, 16 of which breeding there. Between these, we highlight a critically endangered species recorded for the first time in Romania, the ruddy shelduck (*Tadorna ferruginea*), as breeding species in the basin of Jijia River. There were large breeding population of *Nycticorax nycticorax*, *Egretta garzetta*, *Ardea alba*, *Ardea purpurea*, *Platalea leucorodia* and *Plegadis falcinellus*. corresponding author e-mail: mihalescu43@gmail.com

POSTER_13: **DYNAMIC OF BIRD FAUNA ON SOME RESERVOIRS FROM THE MIDDLE BASIN OF BARLAD RIVER (ROMANIA)**

Carmen Gache, Alina-Elena Ignat

Al. I. Cuza University from Iasi, Iasi, Romania

Our study presents data on the diversity of bird species recorded in the perimeter of four reservoirs from the middle basin of Barlad River: Motoseni on Zeletin River, Pereschiv on Pereschiv River, Cuibul Vulturilor on Tutova River and Rapa Albastra on Simila River. Excepting Pereschiv reservoir, the others are part of ROSPA0159 Lakes around Mascurei, respectively, ROSPA0167 Barlad River between Zorleni and Gura Garbovatului. We collected our data during three periods of field monitoring activity (2006 - 2012, 2018 – 2019, and 2022 – 2023). We identified 162 bird species, 90 as breeding species in the area, and we present quantitative data for the observed bird species, too. The bird species related to the aquatic ecosystem are dominant by diversity and populations all time during the year. We notice the relevance of this territory as a migration stopover point for the bird fauna in the eastern Romania. We mention *Tadorna ferruginea* as breeding species and the constant presence of adult and juvenile birds of *Haliaeetus albicilla* during the breeding season on the Pereschiv reservoir. We recorded 42 bird species listed in Birds Difective Annex 1 and 43 listed in Annex 2. We recorded 27 bird species included in the Romanian Red Book of Vertebrates, 4 as critically endangered species and 6 as endangered species in our country. We advance the proposal that Pereschiv reservoir is included in Natura 2000 network, through location and ornithological significance in the area related to the Motoseni reservoir.

POSTER_14: **CONTRIBUTION TO THE STUDY OF BIRD FAUNA DURING THE WINTERING TIME ON THE TERRITORY OF JIJIA-IASI WETLANDS, ROMANIA (RAMSAR 2422)**

Andi Romila, Iulian Fomici, Valentin Mihalescu, Carmen Gache

Al. I. Cuza University from Iasi, Iasi, Romania

Our study took place on the territory of Ramsar site no. 2422 Jijia – Iași Wetlands and presents data regarding the diversity of bird species throughout the wintering time. During our field monitoring activity (March 2022 - March 2023), we identified a total number of 153 bird species at the confluence area of Jijia River with its tributaries Miletin and Jijioara , but the wintering bird fauna only included 79 species. From the perspective of diversity, passerine species are dominant. We recorded large wintering waterfowl populations, primarily of geese and dabbling ducks which occurred with flocks including thousands of individuals. We identified nine bird species listed in Birds Directive Annex 1 as winter visitors in the perimeter of this Natura 2000 site. We are also confirmed the wintering presence of six bird species included in the Romanian Red Book of vertebrates: *Bucephala clangula*, *Mergellus albellus*, *Microcarbo pygmaeus*, *Ardea alba*, *Haliaeetus albicilla* and *Corvus corax*. We noticed the high influence of severe drought on the diversity of typical aquatic bird fauna and the absence as wintering visitors of the diving ducks (*Aythya* sp.), present with hundreds of a thousands of individuals only two decades ago. Corresponding author: romila.andi23@gmail.com

POSTER_15: **ASPECTS REGARDING THE DIVERSITY OF THE BIRD FAUNA IN THE PERIMETER OF SOME RESERVOIRS ON THE VALLEY OF SIRET RIVER (BACAU COUNTY, ROMANIA)**

Madalina-Elena Rosu, Ioana-Gabriela Filipiuc, Carmen Gache

Al. I. Cuza University, Iasi, Romania

In this study, we present the results of our monitoring activity on the bird fauna of three reservoirs (Galbeni, Racaciuni and Beresti), situated in the middle basin of Siret River and part of ROSPA0063 Buhusi – Bacau – Beresti site. Our study began in June 2022 and ended in May 2023, following the dynamic of bird fauna during the breeding season, migration, and wintering time. We identified 152 bird species in the investigated area, and we present quantitative data for each studied reservoir. The breeding populations are small, but these three reservoirs shelter significant waterfowl population during the migration and wintering time. We notice the relevance of this territory as flyway for white stork (*Ciconia ciconia*) and raptor birds (Accipitriformes, Falconiformes) in the eastern Romania. We mention the presence of 39 protected bird species through Bird Directive Annex 1. We recorded 30 bird species mentioned in the Romanian Red Book of Vertebrates, including four as critically endangered bird species: *Pelecanus crispus*, *Haliaeetus albicilla*, *Clanga clanga* and *Milvus migrans*. We also give data about trends of the bird species comparing with similar studies done more than two decades ago in this perimeter. We identified the main threatening risks for the avifauna and assessed the level anthropogenic impact on it in the area. corresponding author: rosu.madalina11@yahoo.com

POSTER_16: **ASPECTS OF THE ECOLOGY OF THE EURASIAN KESTREL (*Falco tinnunculus*) IN THE IASI CITY, ROMANIA**

Ioana-Gabriela Filipiuc, Madalina-Elena Rosu, Carmen Gache

Al. I. Cuza University, Iasi, Romania

The Eurasian kestrel (*Falco tinnunculus*) is a diurnal raptor that has been associated with urban areas for several decades, becoming used to living within cities all over Europe. At the same time, its population trend shows a slow decline on a continental level. In our study, we combined and compared observations introduced in the national database Ornitodata during the years 2021 and 2022 with our own data from 2022 and 2023. The quantitative data shows a positive trend of the population compared to the previous year. The 52 individuals present within the city in 2022 grouped in areas defined as favorable, and the 11 breeding pairs observed all raised at least one chick. We have also determined a preference for nesting on the roofs or in the attics of tall buildings, located very close to the green areas that serve as hunting grounds. During the colder months, a large part of the population migrates either to the outskirts or outside of the city. By analyzing two sets of pellets from one breeding pair, we have found that the main prey items are small rodents, followed by insects and birds. We have also observed birds' interaction with the urban habitat and current data regarding the benefits and challenges of synanthropization for this kestrel species. corresponding author: ioana_filipiuc@yahoo.com

POSTER_17: **SEVERITY OF WEATHER DID NOT AFFECT PHYSIOLOGICAL STATE OF WINTERING GREAT TITS IN A LARGE URBAN PARK**

Irina Demina, Arseny Tsvey

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One significant consequence of global climate change in temperate and northern latitudes is the increase in winter temperatures, which leads to a decrease in the duration and severity of winter colds. While the impact of environmental conditions on bird winter physiology has been recognized, studies on the impact of climate change on the physiological state of wintering birds are scarce. To predict the long-term consequences of climate change on bird physiology, it is crucial to assess changes in physiological parameters over a short time frame and within a limited range of weather fluctuations. In this study, we examined the physiological state of the great tit (*Parus major*) in a large urban park (Saint-Petersburg, Russia) over four winter seasons characterized by varying temperatures and other meteorological factors (humidity, atmospheric pressure, wind speed, and snow cover stability), which potentially affect the physiology of wintering birds. The physiological parameters we assessed included the condition index, hematocrit, leukocyte profile, glucose concentration, and β-hydroxybutyrate concentration in the blood. Contrary to our expectations, we did not observe any differences in the studied physiological parameters between more severe and milder winter seasons. This discrepancy may be attributed to additional factors such as food provision at feeders or a warmer local microclimate found in urban habitats.

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POSTER_18: **BREEDING BIRD ASSEMBLAGE IN URBAN GREEN ZONES OF SAINT PETERSBURG**

Ivan J. Starikov[1,2,3], Sergey A. Petrov[1]

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In this research, we continue to investigate the breeding avifauna of the green areas inside the large city of Saint Petersburg (Russia). These biotopes exceed 40% of urban territory and are characterized by different age, surface and types of vegetation. The ornithological research in St. Petersburg city parks has almost century and half years of study, at the same time the large-scale works are very few. We selected 50 various urban green areas in all districts of inner city except suburbs, ten in each of the plot type: parks, gardens, squares, boulevards and cemeteries. Bird counts were carried out twice in each location from the end of May till mid-July 2023 by the line transect method (Järvinen, Väisänen 1975, 1983) with participation of experienced volunteers. For each plot, several characteristics were calculated: surface, vegetation cover, variables of surrounding landscape. The specific, functional and phylogenetic diversity of breeding bird fauna were measured for each green zone as well as for the types of areas in general. Obtained results show large variations of the values which correlate not only with the surface of urban green zones but also with other ecological characteristics. The species-area relationships are discussed. This study was carried out in frames of the State assignment of ZIN RAS No 122031100282-2.

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POSTER_19: **A COMPARISON TO THE INVASIVE BIRD SPECIES OF TURKEY AND THE WORLD**

Ilhami Kiziroğlu

Technical University of Ostim, Ankara, Türkiye

According to IUCN list, 98 (61 non-passerine and 37 passerines) bird species of the world are listed as invasive. In the same list, the number of invasive bird species for Turkey is given as 41 (28 non-passerine and 13 passerine). However, species such as the common starling (*Sturnus vulgaris*), the chukar partidge (*Alectoris chukar*), the western swampen (*Porphyrio porphyrio*), the common blackbird (*Turdus merula*), European magpie (*Pica pica*), the mute swan (*Cygnus olor*), the greylag goose (*Anser anser*), the mallard (*Anas platyrhynchos*), the little owl (*Athene noctua*), the barn owl (*Tyto alba*), the song trush (*Turdus philomelos*) and the rook (*Corvus frugilegus*) are native to Turkey. Many old records are already available for these species. In addition, *S. decaocto*, *A. chukar*, *A. platyrhynchos*, *P. porphyrio*, *C. livia*, *P. pica*, *S. vulgaris* and *P. domesticus* are the most important species of Turkey's avifauna and occur with large populations, so their IUCN conservation should be reappraised. Moreover, *S. decaocto* should be considered non-native to Europe, as it had been brought there by the Turks during the second siege of Vienna in 1683 and is mentioned in Evliya Çelebi travelogues as early as the 16th century. For Turkey, 5 of the non-passerine species (*Coturnix japonica*, *Oxyura jamaicensis*, *Psittacula eupatria*, *P. krameria* and *Spilopelia senegalensis*) and two passerine species (*Acridotheres tristis* and *Anthus rubescens*) are identified as invasive but established bird species. In addition, on the IUCN list, of the 83 bird species considered Data Deficient(R) and Not Evaluated(N) in Turkey, 17 (e.g., *Alopochen aegyptiaca*, *Anser caerulescens*, *A. cygnoides*, *Branta canadensis*, *Cairina moschata*, *Cygnus atratus*, *Emberiza rustica*, and *Pycnonotus cafer*).

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POSTER_20: **INVASIVE SPECIES AND THEIR IMPACT**

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Invasive alien species (IAS) have significant permanent and costly impacts on the economy, the environment and human health. WWF reports that around 7,000 species travel between the seas in the ballast water tanks of ships every day. The Mediterranean region is the most threatened by invasive species. Of the 450 invasive alien species (IAS) in Turkish coastal waters, 66 per cent originate from the Suez Canal; 30 per cent are transported via maritime trade" (e.g., ballast water). In marine waters, 76 per cent (306 species) of IAS have established in the invaded area, of which 15 per cent (59 species) are "transient", 6 per cent (23 species) are "indeterminate" and 3 per cent (13 species) are "cryptogenic", i.e., they arrived on the Turkish coast as IAS for unknown reasons. In the list of the 100 worst invasive species in the world published by the Global Invasive Species Database, four of the most dangerous invasive species (ear jellyfish, sea slug, killer algae and water hyacinth) were found in Turkish seas. The most dangerous IAS in our seas: *Caulerpa taxifolia*, *Lagacephalus sceleratus*, *Pterois miles*, *Siganus luridus*, *Asterias rubens* and *Eichornia crassipes* in the Aegean and Mediterranean Seas; *Mnemiopsis leidyi* and *Rapana venosa* in the Black Sea. Some of the 61 invasive fish species introduced from the Red Sea through the Suez Canal to the Turkish coasts of Antalya and the Mediterranean Sea due to IAS and climate change: *Champsodon nudivittis*, *Upeneus moluccensis*, *Scomberomorus commerson*, *Cynoglossus sinusarabici*, *Remora australis* and *Stolephorus insularis*. In the marine ecosystems of Turkey: *Retusa desgenettii* in the Mediterranean Sea; *Abudefduf saxatilis, Scarus ghobban* and *Diadema setosum* in the western Mediterranean Sea; *Pseudodiaptomus marinus* in the Marmara Sea; *Scarus ghobban* in the Aegean Sea.

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POSTER_21: INFLUENCE OF WEATHER AND CLIMATE CONDITIONS ON THE REPRODUCTION PATTERNS OF MALLARDS (*Anas platyrhynchos*) AND TUFTED DUCKS (*Aythya fuligula*) IN SOUTHERN WESTERN SIBERIA

Marina Selivanova[1], Ivan Frolov[1,2,3], Elvira Tishchenko[1,2,3]

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This study investigates the reproductive ecology of Mallards (*Anas platyrhynchos*) with 2311 nests and Tufted Ducks *(Aythya fuligula*) with 2196 nests in Southern Western Siberia, primarily focusing on the influence of weather and climate conditions. These widely distributed waterfowl species play critical ecological roles, serve as disease vectors, and are subject to hunting, making their reproductive success crucial for conservation and resource management. Our research encompasses the analysis of reproductive timings and dynamics for both species, emphasizing the impact of weather and climate variables, particularly the North Atlantic Oscillation (NAO) indices and specific spring temperature thresholds (-5°C, 0°C, +5°C, +10°C). Data spanning from 1970 to 2018 were collected at Lake Krotovo in the Novosibirsk region. The seasonal dynamics of nest survival rates were evaluated using the MARK program in R. Results indicate a lack of significant long-term shifts in nesting timing for either species. However, we observed a correlation between the median egg-laying date and NAO indices, particularly during specific months (February–April), and temperature transitions through 0℃ and +5℃. Utilizing generalized linear models, we demonstrated that weather and climate factors could explain a substantial portion of the variance in the median egg-laying initiation date. These models hold potential for informing resource management recommendations. Furthermore, our research revealed that nest survival was influenced by spring temperatures, with higher survival rates during warmer springs. A comparison between the two species indicated that Mallards exhibited superior nest survival in warm springs, while Tufted Ducks displayed higher nest survival in cold springs.

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POSTER_22: **DECODING THE DISTRIBUTION PATTERNS OF ROCK PIGEONS (*Columba livia*) IN KAZAKHSTAN'S URBAN LANDSCAPES**

Bekzhan Berdikulov[1,2], Andrei Gavrilov[2], Samat Bekbenbetov[2]

[1]Al-Farabi Kazakh National University, Almaty, Kazakhstan. [2]Institute of Zoology, Almaty, Kazakhstan

Rock pigeons (*Columba livia*), occurring in various regions worldwide, are remarkably abundant in Kazakhstan's urban areas. Nevertheless, detailed studies concerning their urban ecology and specific distribution patterns within Kazakhstan remain scarce. This research, utilizing the comprehensive data available from eBird, meticulously studies their occurrence and spread across prominent cities, with a spotlight on Almaty and Astana, spanning the period from 2007 to 2021. One essential finding of the study is the pigeon enduring presence: contrary to common belief, they turned out not to be just passers-by but well-established residents. Interestingly, a segment of this population even showcases migratory behavior. Their habitation encompasses a multitude of urban terrains, and intriguingly, certain specific urban pockets exhibit denser pigeon populations, indicating these birds have distinct urban preferences. However, the study's implications stretch beyond mere distribution outlines. There is a growing belief in the scientific community that rock pigeons, owing to their close interaction with urban environments, can be potential bioindicators, signaling the health or degradation of urban ecosystems, especially concerning environmental pollutants. Consequently, understanding their behavior, preferences and patterns provides a unique lens to measure the vitality of our urban environments. Such insights can be critical in shaping urban planning and conservation strategies, ensuring cities remain hospitable not just for pigeons, but a spectrum of avian life. It highlights the importance of ongoing surveillance and research to decipher the dynamic relationship between these birds and evolving urban terrains, aiming for a harmonious coexistence.

POSTER_30: **COMPARISON OF HABITAT TYPES THAT SPUR-WINGED LAPWING (*Vanellus spinosus*) BREED IN TERMS OF EGG SIZES**

Leyla Özkan

Düzce University, Düzce, Türkiye

Egg size is an effective factor for reproductive success in birds affecting chick size and their survival rates. Precocial-type chicks with no parental cares need to use their own biological reserves to supply the energy they expend in walking, running, hiding from predators, etc. The spur-winged lapwing *Vanellus spinosus* (L., 1758) is a common avian species having precocial-type offspring. The species is seen as a summer visitor in Türkiye and Boğazkent in particular. In the present study, the characteristics of the eggs laid in three habitats (agricultural lands, barren lands and meadows) within this area were compared. To this aim, the eggs were weighed and their width and length were measured. Additionally, the volume and sphericity index of the eggs were calculated. As e rasult of our study we found significant differences in egg measurements between the habitats with eggs laid in meadows being larger, heavier and with greater egg volume than in the other two habitats. However, the hatching rates in the meadows were the lowest (43.8 %) in comparison with the agricultural lands (67.7 %) and barren lands (73.3 %). **This paper was produced from the article ''Habitat-related Egg Size Differences and Hatching Success in the Spur-Winged Lapwing Vanellus spinosus (L., 1758) (Charadriiformes: Charadriidae)'', Acta Zoologica Bulgarica, 75 (2), June 2023: 209-213*

Final category: Evolution

ORAL_24: **SONG EVOLUTION IN TITS AND CHICKADEES (AVES: PARIDAE)**

Dieter Thomas Tietze

Center of Natural History, Hamburg, Germany

Passerines are the most successfully diversified bird order (around 60% of all avian species). That is presumably due to their outstanding cognitive abilities. This mental advantage enables them to quickly make new resources accessible and thus to inhabit huge areas. Furthermore, they developed complicated songs to defend their territories and to attract females for mating. Of course, not all passerine species are equally clever. Even within a single family of 50 to 70 species, relevant traits may vary considerably. Tits and chickadees are widely distributed songbirds and exceptionally smart. They evolved in the East Asian mountains. The earliest splits date back 10 to 15 million years and between 8 and 5 mya they dispersed from the Sino-Himalayas and got established also in North America and Africa. Although most species are of similar size, they vary a lot in coloration and plumage pattern. The territorial songs are relatively short and simple and differ hardly within a single male and within a population. I am asking, 1) if despite the quite uniform size the general negative correlation between body size and song frequency can be recovered, 2) which song traits are influenced by distribution and thus by interspecific differences in climate niche and 3) if across species more colorfulness of the plumage coincides with less diversity in song (trade-off under sexual selection). I am approaching the answers to these questions for 55 out of the 64 species with 1084 song recordings retrieved from Xeno-Canto.org and automated analytical methods including artificial intelligence.

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ORAL_25: INVESTIGATING THE GENOMIC DISTORTION OF FARM-REARED CHUKAR PARTRIDGE (*Alectoris chukar*) POPULATIONS USING HIGH-DENSITY SNP DATA

Bekir Kabasakal[1], Huriye Doğru[2], Eymen Demir[3], Sarp Kaya[4]

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The chukar partridge (*Alectoris chukar*) is a popular game bird in Turkey, where thousands of individuals are reared in breeding farms and released annually into the wild by the General Directorate of Nature Conservation and National Parks. However, the uncontrolled release of farm-reared partridges and their contact with local populations may have a negative impact on the gene pool of wild individuals and can result in a variety of negative outcomes, such as a decline in reproductive success, embryonic developmental anomalies, reduction in disease resistance, and physiological stress. Moreover, native chukar partridge populations are declining due to anthropogenic reasons, such as habitat fragmentation and loss, overharvesting, and environmental pollution. In this study, therefore, samples from both farm-reared (50) and wild partridge (46) individuals (Anatolia, Greece, China) were used to investigate the genetic similarity, possible congeneric contaminations, and inbreeding depression level of farm-reared populations, as well as the potential selection signals in the farm-reared populations due to the breeding conditions in farms. High-density SNP data from the whole genome were analyzed. The paired-end (2x150bp) genomic library was sequenced using the Illumina Hiseq X Ten platform, and after the process of demultiplexing and quality filtering, an average of 3-6 million reads were obtained for each individual. SNP calling was performed using *Coturnix Japonica* reference genome, and after final filtration, we obtained 18,383 SNPs from 96 individuals. We discuss our preliminary results. This study was funded by the Scientific and Technological Research Council of Turkey (TUBITAK) under project No: 121C381.

ORAL_26: **REDUCED SPECIES RECOGNITION BETWEEN SUBSPECIES OF *Periparus ater* IN CYPRUS, LEBANON AND TURKEY: A COMPARISON WITH ACOUSTIC TRAITS AND BEHAVIORAL ANALYSIS**

Nathalie Boutros, Alexander Kirschel, Samuel Jones

University of Cyprus, Nicosia, Cyprus

Geographic isolation can lead to different interspecific songs, which can reduce the territorial reaction and mating success of local species when they come into contact with allopatric conspecifics. We focused on the coal tit (*Periparus ater*), a species with a trans-Palearctic distribution. We are conducting research to determine if the Cypriot subspecies of coal tit should be recognized as a separate species from its mainland counterpart. Our field experiments were carried out in Lebanon. In these trials, we introduced birds to three types of stimuli: one sympatric song and two allopatric songs. The sympatric song was locally recorded, while the allopatric stimuli comprised of a Cypriot song (which we had recorded earlier) and a Turkish song (sourced online). Parallel to our research in Lebanon, we also carried out the same reciprocal experiments in Prodormos - Cyprus. We have also conducted a detailed analysis of the bird songs we recorded, examining a range of different parameters. Our findings have shown interesting variations in reactions to allopatric songs. The bird population in Cyprus demonstrated a rather subdued response to these foreign songs. Meanwhile, in Lebanon, the birds had a significantly milder reaction to the Cypriot song as compared to the Turkish one. This observation sets a compelling stage for our upcoming field work in Turkey beginning of September, which we anticipate will provide further insights. Our analysis revealed significant differences in Cypriot bird songs, which were slower and higher in frequency, likely influenced by Cyprus's environmental characteristics.

Final category: Migration

ORAL_27: **UNFOLDING THE ELUSIVE MIGRATORY DIRECTION GENES IN THE WILLOW WARBLER GENOME**

Staffan Bensch

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Understanding the genetic architecture of the migratory program is a research field in its infancy - no gene has so far been conclusively identified as linked to the expression of the migratory phenotype. The willow warbler *Phylloscopus trochilus* has two migratory divides located in central Scandinavia and south of the Baltic Sea. Smaller and greener birds of the subspecies *trochilus* breed in southern Scandinavia and migrate toward SW for wintering in western Africa, whereas larger, grayer birds of the subspecies *acredula* breed in northern Scandinavia and Finland and migrate towards SE for wintering in east and south Africa. Absence of differences at neutral loci between the subspecies suggested that the phenotypic trait differences have evolved within the last 10,000 years during the process of postglacial colonization of northern Europe. New data from whole genome resequencing and genotyped birds with geolocator tracks from the Scandinavian hybrid zone demonstrate that finding genes involved in the migratory program is challenging, but that the willow warbler system provides promising directions of research that might finally lead to a breakthrough in this field.

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ORAL_28: **THE COMMON TERNS IN CROATIA MIGRATE THROUGH TWO DIFFERENT FLYWAYS**

Željko Pavlinec[1], Ana Galov[2], Veronika Lončar[2], Sanja Barišić[1], Davor Čiković[1], Vesna Tutiš[1], Jelena Kralj[1]

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Knowing the specific flyways of the bird populations allows us to identify critical stopover sites and foraging grounds along the migration routes, as well as wintering habitats. This information is essential for effective conservation efforts. By protecting key sites along these flyways, we can ensure that birds have safe places to rest, feed, and maintain healthy populations. Common Terns undertake long-distance migrations that span continents and cross international borders. Genetic data from Croatian Common Terns, including microsatellite loci, MHC loci and mitochondrial DNA, shows no spatial associations indicating consistent exchange of genetic material between different colonies. Despite this, light-level geolocation data, used to track migration of birds from the same colonies shows clear separation of birds into two migratory flyways, with the birds from coastal colonies using the western route (West Mediterranean, East Atlantic Ocean, Gulf of Guinea) that belongs to the East Atlantic flyway, while the birds from inland colonies migrating through the eastern route (East Mediterranean, Red Sea, Gulf of Aden, West Indian Ocean, Mozambique Channel) belonging to the Black-Sea-Mediterranean flyway. We have compared the durations of migrations and wintering periods and identified key stopover sites along both flyways. Using conductivity data, we assessed the patterns of behavior during migrations and wintering and analyzed the foraging activities of terns along both flyways. Both groups show higher foraging activity on stopovers compared to the rest of the migration, but only in autumn. Birds using the eastern flyway show highly increased foraging activities during wintering. Funding: Croatian Science Foundation (IP-2020-02-8793)

ORAL_28: **POST-BREEDING MOVEMENTS OF COMMON TERNS *Sterna hirundo* IN CROATIA**

Jelena Kralj[1], Željko Pavlinec[1], Luka Jurinović[2], Ana Galov[3], Veronika Lončar[3], Sanja Barišić[1], Davor Ćiković[1], Vesna Tutiš[1]

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After breeding, long-distance migrants may either immediately depart for autumn migration, or spend a pre-migration period during which they disperse over various distances, or even stay in the breeding area. The Common Tern (*Sterna hirundo*) is a long-distance migrant that lays one clutch per season. In the case of breeding failure, it may lay a replacement clutch at the same or different breeding patch. We studied short- and medium-distance movements of Common Terns from two freshwater and two marine colonies in Croatia between May and August. Thirty Common Terns were tagged with remote download GPS devices, and among these, 11 showed dispersal movements. The majority of successful breeders left the breeding area with no medium-distance dispersal movements recorded. After experiencing breeding failure, some birds exhibited high site fidelity and immediately started laying replacement clutches at the same or neighboring breeding patches, while others moved away from the colony, covering distances of up to 200 km, and during that period visited several conspecific colonies. For birds that dispersed, we calculated daily travel distances and maximum distances from the breeding colony. Birds breeding in Croatia visited Italy, Slovenia, and Hungary. Knowledge about post-breeding movements may help understand population connectivity, as well as reveal the spread of pathogens. This is especially important in light of the recent outbreaks of high-pathogenicity avian influenza among seabirds. Funding organization: Croatian Science Foundation (IP-2020-02-8793)

,ORAL_29: **POTENTIAL IMPACTS OF LANDFILLS ON AVIAN MIGRATION: A GEOGRAPHIC INFORMATION SYSTEM (GIS) BASED INVESTIGATION OF THE RIFT VALLEY-RED SEA FLYWAY IN TURKEY**

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Dokuz Eylul University, Izmir, Türkiye

Turkey lies along two significant global bird migration routes to the Arctic: the Mediterranean-Black Sea route and the West Asia-Africa route. It has been observed that the Anatolian Peninsula and Thrace regions serve as a passage for 304 bird varieties from 43 different species along the Rift Valley-Red Sea Flyway. Predatory birds constitute most of these species, with 32 falling into this category. Additionally, this list includes storks, pelicans, cranes, and ibises. Based on the IUCN Red List, among these species, four are categorized as "Near Threatened"(Bearded Vulture, Cinereous Vulture, Lanner Falcon, Dalmatian Pelican), four as "Vulnerable"(Eastern Imperial Eagle, Greater Spotted Eagle, Montagu's Harrier, Hen Harrier), and four as "Endangered"(Egyptian Vulture, White-tailed Sea-eagle, Osprey, Demoiselle Crane). The Saker Falcon is classified as "Critically Endangered," and the Northern Bald Ibis is “Regionally Extinct”. In contrast, according to data from TURKSTAT, in 2020, approximately 28 million tons of municipal waste were deposited in landfill sites in Turkey, with more than 160 landfills currently in operation. Notably, about 75% of the waste generated by 40 major cities is disposed of in 81 landfill sites situated in the Marmara, Central Anatolia, Aegean, and Mediterranean regions of the country. These landfill sites coincide with the major flyways of the aforementioned bird species. In this context, the potential impacts of landfill sites in Turkey on these crucial bird migration routes were investigated. The analysis considers factors such as site elevation, area, annual disposal rate, distance from important bird areas, and landfill gas emissions.

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POSTER_23: VISUAL OBSERVATIONS OF WATERFOWL AS A BASIS FOR VALIDATING THE ENVIRONMENTAL DNA METHOD FOR MONITORING BIRD DIVERSITY

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In global practice, the method of assessing biodiversity through analysis of environmental DNA (eDNA) has been used only in relatively recent years, yieldding interesting results for studying fish, invertebrate and cetacean diversity. The comparison of direct visual observations with data obtained through eDNA analysis is also promising for species identification of migratory waterfowl. Our study was conducted in Nizhne-Svirsky Reserve, including wetland habitats of international importance for waterfowl breeding and stopover. In 2023, during waterfowl migrations, we conducted visual observations of bird species composition and abundance in the waters of Lake Ladoga from stationary points. Simultaneously, we regularly collected water samples from stationary points for subsequent eDNA extraction and molecular-genetic analyses aiming to identify the bird species present in the waters. For 20 common species of waterfowl, we determined their duration of stopovers on the lake, the dynamics of their abundance during migration periods, the daily dynamics of their presence and the influence of weather factors on these dynamics. The data from direct visual observations were compared with the results of eDNA analysis of birds in the aquatic environment within the study area. The research was funded by the Russian Science Foundation, grant #22-74-10043.

Final category: Others

ORAL_30: **INVESTIGATION OF ANTALYA/MANAVGAT CASE IN TERMS OF ORNITHOTOURISM**

Hakan Sert

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The emergence of eco-tourism, ornithotourism, and other sustainable tourism strategies has gone a long way toward minimizing these negative impacts on the environment and ensuring that the economic benefits of tourism contribute to environmental protection and the sustainable use of natural resources. At the same time, it is one of the fastest-growing tourism segments and is expected to rise even faster in the future by attracting investments for the establishment of privately-owned nature reserves in a growing number of developing countries. In 2016, 55.1 billion dollars were spent on observation equipment in the United States alone. In this respect, ornitho-tourism contributes to sectors such as tour companies, trained guides, regional tradesmen, etc., as well as contributing to these sectors due to the need for equipment and guides with good knowledge of birds and wildlife. Especially for migratory bird species, the important wetlands in Manavgat and its surroundings provide an important migration preparation and accommodation area for birds before a barrier such as the Mediterranean Sea during the spring migration period, and a resting and accommodation area after crossing the Mediterranean Sea during the fall migration period. Within the borders of Antalya province, which stands out with its bird diversity, 316 different bird species have been recorded. Four areas (Boğazkent/Kocagöl, Titreyengöl- Sorgun Forests, Oymapınar, Manavgat River and Karpuz Stream and Köprülü Canyon) stand out in Manavgat and its immediate vicinity with their different habitat types (habitats) and bird diversity.

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ORAL_31: **ORIGIN OF THE MYSTERIOUS BLACK FRANCOLIN (*Francolinus francolinus*) POPULATIONS FROM GREECE AND NORTHERN AFRICA FINALLY UNVEILED**

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Biological collections host valuable specimens that may be key to addressing long-debated issues in different research fields, including conservation biology and historical biogeography. In this study, we use 200-year-old museums specimens to assess the contentious nature (i.e., the nativeness versus the allochthony) - of the black francolin (*Francolinus francolinus*, Phasianidae) populations once resident in Greece and northern Africa. This species, presently ranging from Cyprus and the Middle East to the Indian subcontinent, was deemed to have persisted in these Mediterranean regions until the first decades of the 19th century by some authors, yet this hypothesis had been firmly disproved by others due to the lack of supporting historical material and the fragmentary the literary evidence available. Nevertheless, we found four 200-year-old museum specimens - arguably the only ones still available from Greece and northern Africa - and sequenced their mitochondrial DNA Control Region. The comparison with conspecifics (n = 396) from the entirety of the historic and current species range unveiled that the new samples belong to previously identified genetic groups from the Near East and the Indian subcontinent. Other than denying the

occurrence of an allegedly native westernmost subspecies, our finding corroborates the role of the Crown of Aragon behind the circum-Mediterranean expansion of the black francolin, including Greece and northern Africa. Genetic evidence points to long-distance trade of these birds along the Silk Road to be sold in the Eastern Mediterranean first, and from there further west in Europe and northern Africa. Corresponding author: Giovanni Forcina giovanni.forcina@uah.es

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POSTER_24: **CAN BIRDS CARRY THE ENDOSYMBIONT BACTERIA FOUND IN INVERTEBRATES DUE TO THEIR PARASITES?**

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Invertebrates can host a wide variety of endosymbiont bacteria (such as *Wolbachia*, *Cardinium*, *Spiroplasma*). Each of the endosymbiont bacteria exhibits various characteristics on the host. The relationship between endosymbiont and host can be located in different ways within the wide spectrum of symbiosis (such as commensalism, mutualism and obligate symbiosis). Birds carry a wide variety of parasites due to the heterogeneous nature of the environments they live in. For this reason, they may contain endosymbiont bacteria belonging to various parasites in their blood. In this preliminary study, we screened common *Cardinium*, an endosymbiotic bacterium of invertebrates, in 43 different bird species from various regions of Anatolia. Total DNA isolated from 109 blood samples was tested for the presence of bacteria by polymerase chain reaction (PCR) using *Cardinium*-specific primers. Although endosymbiotic *Cardinium* was not found in the samples examined, there is a possibility that other endosymbionts or pathogenic bacteria could be present given that birds can harbor a variety of parasites. In this regard, it would be interesting to investigate the microorganisms that birds carry.

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POSTER_25: **BIOPHYSICAL MODELS ACCURATELY CHARACTERIZE THE THERMAL ENERGETICS OF A SMALL INVASIVE PASSERINE BIRD**

Marina Sentis Vila, Cesare Pacioni, Annelies De Cuyper, Geert Janssens, Luc Lens, Diederik Strubbe

Ghent University, Ghent, Belgium

Effective management of invasive species requires accurate predictions of their invasion potential in different environments. By considering species' physiological tolerances and requirements, biophysical mechanistic models can potentially deliver accurate predictions of where introduced species are likely to establish. Here, we evaluate biophysical model predictions of energy use by comparing them to experimentally obtained energy expenditure (EE) and thermoneutral zones (TNZs) for the common waxbill (*Estrilda astrild*), a small-bodied avian invader. We show that biophysical models accurately predict TNZ and EE and that they perform better than traditional time-energy budget methods. Sensitivity analyses indicate that body temperature, metabolic rate, and feather characteristics were the most influential traits affecting model accuracy. This evaluation of common waxbill energetics represents a crucial step toward improved parameterization of biophysical models, eventually enabling accurate predictions of invasion risk for small (sub)tropical passerines.

POSTER_26: **ISOLATION AND IDENTIFICATION OF DIFFERENT FUNGAL SPECIES FROM COCKATIEL**

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Mycotic infections occurring in parrots are important for both animal health and environmental health. Pathogenic fungal species can be transmitted from parrots to the environment through their feces. In this study, fecal samples taken from a cockatiel experiencing loss of appetite, diarrhea and weight loss were examined. Fecal samples were examined morphologically and microscopically, and molecular identification studies of the isolated species were also carried out. Stool samples were cultured on Dichloran Rose-Bengal chloramphenicolagar (DRBC) and blood agar media. Samples with different morphologies were purified onto malt extract agar, and microscopic and molecular identification was made from pure colonies. Conidia structure, spore structures and other fungal structures were examined in microscopic examination. Phenol-Chloroform Isoamyl Alcohol method was used for DNA isolation. Following fungal DNA isolation, polymerase chain reaction (PCR) study was performed. ITS1 (50-TCCGTAGGTGAACCTGCGG-30) / ITS4 (50-TCCTCCGCTTATTGATATGC-30) regions were used in PCR studies. The sequence study was outsourced to Innopenta Biotechnology company, and the sequence results were compared with the data in GenBank using the nBLAST program (https://blast.ncbi.nlm.nih.gov/) and molecular identifications were made. As a result of the study, *Mucor piriformis, Rhizopus stolonifer, Fusarium* spp. They were defined according to their morphological and microscopic features. As a result of molecular study, *Fusarium fujikurai* was identified. Identification of fungal agents is important in early diagnosis and determining the antifungal treatment to be applied. Key Words: *Mucor piriformis, Rhizopus stolonifer, Fusarium fujikurai,* Cockatiel, Feces.

Final category: Parasitology

ORAL_32: **DYNAMICS OF RESTING METABOLIC RATE AND INNATE IMMUNE RESPONSE IN MALARIA-INFECTED EURASIAN SISKINS.**

Maria Erokhina[1,2], Andrey Bushuev[2], Elena Platonova[1], Vadim Khaitov[3], Alexander Davydov[1], Vaidas Palinauskas[4], Andrey Mukhin[1]

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It is believed that when birds are infected with malaria parasites not found in their natural habitat, this can lead to serious negative consequences for the infected individuals. Given global warming and the potential expanding range of vectors, there is a growing threat of infection to bird species in northern latitudes that have never been exposed to tropical malaria parasites. In our study, we infected two groups of young siskins (*Spinus spinus*). One group was infected with a parasite species known to transmit in the North Palearctic, *P. relictum* (SGS1 lineage). The second group was infected with a parasite transmitted in Central and Southern Africa, *P. ashfordi* (GRW2 lineage). We compared the effects on the birds' physiological state using parameters like resting metabolic rate (RMR) and interleukin-6 (IL-6) levels. RMR gives insight into the energetic cost of the disease, and IL-6 is a pro-inflammatory cytokine indicative of the acute phase response within the innate immune system. Our results reveal that during the acute phase of SGS1 infection, a decrease in RMR and a reduction in IL-6 levels occur in siskins. For the GRW2 group, a similar trend in IL-6 was observed during the acute phase but not in the later stages of chronic infection. The RMR dynamics in the GRW2-infected siskins differed significantly from those in the SGS1 group. While our findings do not conclusively show that tropical malaria has more severe consequences for infected siskins, they do indicate distinct disease progressions between the two infected groups of birds.

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ORAL_33: **A STUDY ON THE PREVALENCE OF BLOOD PARASITES IN BIRD POPULATIONS IN TÜRKİYE**

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Blood parasites are a significant issue affecting bird populations, and it is an issue that should be considered concerning the health of birds and the sustainability of ecosystems. To evaluate the hemoparasite prevalence from different districts of Türkiye, we collected 653 blood samples from 54 species and carried out a detailed examination of blood parasites. A total of 101 individuals (15.46%) were found to host blood parasites, revealing interesting findings. According to the research results, the bird species with the highest prevalence of blood parasites were chaffinch, with a total of 30 cases detected, followed by blackbirds (n = 18), chuckar partridges (n = 12) and great tits (n = 8). This finding suggests that different bird species exhibit varying degrees of susceptibility to blood parasites. Among these, *Hemoproteus* was the most common followed by *Leucocytozoon*, *Microfilaria* and *Plasmodium*. Overall, these results advance our knowledge on the prevalence of different blood parasites among bird populations in Turkey, their distribution and variations among species. Such information can contribute to our understanding of bird health and ecosystems and may assist in the development of future conservation and management strategies.

POSTER_27: **BLASTOCYSTIS HOMINIS UNDERGOING PROGRAMMED CELL DEATH VIA CYTOTOXIC GAMMA RADIATION**

Enas Moustafa

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Blastocystis hominis is found in the intestinal tract of a wide variety of taxonomically different hosts such as insects, birds and mammals. Its pathogenesis potential has not yet been established, although numerous case reports suggest that *B. hominis* may cause the development of various gastrointestinal symptoms and disorders. The aim of the present study is to evaluate the destructive effect of different doses of cytotoxic gamma irradiation combined with and compared to metronidazole on *Blastocystis* spp. *in vitro*. The detection of the parasite in stool specimens is conventionally done by microscopy of direct smears, fecal concentrates, or permanently stained smears; interestingly, our data shown programmed cell death in *Blastocystis hominis* displaying key change morphological and biochemical features, namely nuclear condensation and in situ DNA fragmentation and caspase like activity.

POSTER_28: **PREVALENCE OF AVIAN HAEMOSPORIDIAN PARASITES (APICOMPLEXA: HAEMOSPORIDA) IN WILD BIRDS OF NORTHERN EUROPE**

Elena Platonova, Maria Erokhina, Alexander Davydov, Andrey Mukhin

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Malaria parasites and related haemosporidians are common vector-borne pathogens of birds. These parasites are able to develop a high virulence, especially in non-adapted vertebrate hosts. In recent years there has been much discussion regarding how ongoing climate change can contribute to the spread and establishment of southern parasites in northern Europe. Thus, the monitoring of prevalence and diversity of haemosporidian parasites will enable a better understanding of the current epidemiological situation in avian populations of northern regions. The aim of this study was to estimate the prevalence of haemosporidian parasites in the blood of birds in Northern Europe. Blood samples from a total of 175 birds (26 species of 10 families) were collected near the North Polar Circle in vicinity of the cape Kartesh placed in the Chupa Inlet of the Kandalaksha Bay of the White Sea (66B°20.230' N; 33B°38.972' E) during June-July in 2022/2023. Haemosporidian parasites of genera *Plasmodium*, *Haemoproteus* and *Leucocytozoon* were detected using microscopy and PCR (cyt b gene). Infection of haemosporidians was found in approximately 40% of individuals. The most prevalent parasites were *Haemoproteus* (40 infected birds) and *Leucocytozoon* (37 positive samples) but prevalence of *Plasmodium* was very low (4 infected individuals). Co-infection was observed in 10% of birds (mostly *Haemoproteus*/*Leucocytozoon*). All positive blood samples were sequenced and used for analysis of genetic diversity of avian haemosporidian parasites in the study site.

POSTER_29: **NEW DATA ON THE CHEWING LICE (PHTHIRAPTERA) OF WILD BIRDS IN TÜRKIYE**

Bilal Dik

Selçuk University, Konya, Turkey

This study was performed to detect chewing lice species of domestic and wild birds in Türkiye, between the years of 2014-2023. In this period, several hundred bird samples were examined for chewing lice. The birds were examined macroscopically and treated with an insecticide with synthetic pyrethroid. Collected louse samples were preserved in alcohol 70%. They were cleared in potassium hydroxide (KOH) 10% for 24 hours, rinsed in distilled water, and transferred to ethanol 70% and 99%, respectively. Then, they were mounted in Canada balsam on the slides, and dried in an incubator at 60 °C for three weeks. *Colpocephalum percnopteri*, *Aegypoecus* spp. (nymph) and *Laemobothrion* spp. (nymph) from Egyptian vulture (*Neophron percnopterus*), *Eureum cimicoides* from Common swift (*Apus apus*), *Brueelia cyclothorax*, *Menacanthus* spp. (nymph) and *Rostrinirmus boevi* from Spanish sparrow (*Passer hispaniolensis*), *Myrsidea latifrons* from Sand martin (*Riparia riparia*), *Menacanthus eurysternus*, *Menacanthus pusillus* and *Penenirmus visendus* from Bearded reedling (*Panurus biarmicus*), *Philopterus pavidus* from Western yellow wagtail (*Motacilla flava*), *Quadraceps ochropi* from Green sandpiper (*Tringa ochropus*) and *Goniodes pavonis* from Green peafowl (*Pavo muticus*) were detected for the first time in Türkiye. *This project was supported by Selçuk University Scientific Research Projects Coordination Office with the project number 23703032*

Final category: Phylogeography and Phylogeny

ORAL_34: **PHYLOGENETIC POSITION OF PALEARCTIC OWLS BASED ON MITOCHONDRIAL DNA SEQUENCES**

Ivan J. Starikov[1,2,3], Giomar V. Vasileva[4,5], Michael Wink[6]

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Most of the 40 species of Strigiformes occurring in the Palearctic (Gill et al. 2023) have DNA sequences available in public repositories such as GenBank and BOLD. Our aim was to analyze owl sequences for obtaining a comprehensive phylogenetic view on species and subspecies level of this taxonomic group in the large Palearctic realm. Part of the sequences used were newly generated for this research based on tissues collected by one of the coauthors (M. Wink). We used all available COI and Cyt b sequences longer than 500 bp for constructing phylogenetic trees and calculate genetic distances at both loci using Bayesian Inference, Maximum Likelihood and Neighbor-joining methods. The phylogenetic position of species is not in contradiction comparing existing mitochondrial and nuclear owl phylogenies. At the same time, the data on subspecies still remains limited; several taxa also revealed significant intraspecific variation, for example the Little Owl (*Athene noctua*). the information produced in this study can be used in further research to clarify their systematic position. This study was partially supported by Global Education Program and carried out in frames of the State assignment of ZIN RAS № 122031100282-2.

ORAL_35: **COMPLETE MITOCHONDRIAL GENOMES OF *Otis tarda* (OTIDIFORMES: OTIDIDAE) FROM TÜRKIYE, WITH THE TAXONOMICIMPLICATIONS**

Mehmet Baran[1], Mehmet Mahir Karataş[2], Saffet Teber[1], Ahmet Yesari Selçuk[3], Osman İbiş[1], Coşkun Tez[1]

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The Great Bustard (Otidae: *Otis tarda*) is an endangered Palaearctic species with a fast-decreasing population trend raising major conservation concern. In this study, an *O. tarda* complete mitogenome (16820 bp) was sequenced from a tissue collected in Turkiye. The mitogenome consists of 13 protein coding genes (PCGs), 22 transfer RNA (tRNA), 2 ribosomal RNA genes, and a large non-coding control region. The NADH dehydrogenase subunit III (ND3) gene region occurs in two pieces. Cytosine frequency is higher than guanine frequency, while A+T content is 54.70%. ATG is the most common start codon. Of the 22 tRNAs, 8 tRNAs are located in the light chain. Phylogenetic reconstructions based on PCG and the cytb gene alone revealed *O. tarda* clustering with *Chlamydotis* species. While the overall *O. tarda* mitogenome diversity was low (99.113% identity), sequence identity at PCGs varied between 98.66% and 100%. Differences in the genetic distances between samples may arise due to the different evolution rates of the gene regions used in phylogenetic analysis. It was determined that the cytb sequences of *O. tarda* from Spain, available in GenBank, were highly similar to the Turkish haplotypes, which is expected in members of the same subspecies, *O. t. tarda*.

ORAL_35: **ANATOLIA: A HOTSPOT OF AVIAN GENETIC DIVERSITY IN THE WESTERN PALEARCTIC**

Tamer Albayrak

Burdur Mehmet Akif Ersoy University, Burdur, Turkey

Anatolia was one of the most important Pleistocene glacial refugia in the western Palearctic, yet genetic diversity is some vertebrate species is largely overlooked. As part of the three biodiversity hotspots of the world, this region is also home to an astonishingly rich avian community, with nearly 400 breeding bird species. Nevertheless, studies addressing the genetic structure and diversity of this large and taxonomically heterogeneous community are still limited, and information on glacial refugia in this region still scant, especially when compared to the other large Mediterranean peninsulas, namely the Balkan, Italian and Iberian one. In order to contribute to fill this gap, this study addresses the biogeographic pattern of one gamebird *Alectoris chukar*, four common resident songbirds- the Eurasian blue tit *Cyanistes caeruleus*, great tit *Parus major*, Eurasian chaffinch *Fringilla coelebs* and Eurasian blackbird *Turdus merula* - and one endemic species - the Krüper's nuthatch *Sitta krueperi* from Anatolia. We hence compared them to those deposited in public databases, from conspecifics from the rest if their distribution range across the Western Palearctic. The overall genetic structure of these species is consistent with a scenario of isolation for multiple populations in different refugia across Anatolia and subsequent secondary contact in the wake of ice retreat after, which makes this region a hotspot of genetic diversity for both endemic and widespread avian species.

Final category: Wildlife management

ORAL_37: **WIND POWER PLANT PROJECTS AND TÜRKIYE**

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Regarded as a clean energy source, power plants generating electricity from wind are being increasingly established. Unfortunately, however, they have some disadvantages other than advantages such as emission-free energy production. In addition to habitat transformations, there are many findings from the world and Turkey regarding the effects on living things, especially birds and bats. Although the beginning of wind power plants in Turkey dates back to recent times, it has already gained a serious momentum. Regarding the birds, according to the field data collected by us in the last 10 years has revealed that many species of birds are affected by the wind turbines. Songbirds come first among those with carcasses. Small-bodied predators and waterfowl come next. In this study, the carcass findings obtained by us in some power plants established until 2022 in Turkey were evaluated together.

ORAL_38: **GPS-GSM TRACKING AS A TOOL FOR ASSESSING THE HUNTING IMPACT ON THE MIGRATION OF GEESE.**

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The Greater White-fronted goose (*Anser albifrons*) is one of the most numerous hunting species of geese. Autumn hunting is intense in all countries of the species range. However, spring hunting is allowed only in a few countries. The impact of hunting on the animal populations is more significant in spring than in autumn. In Russia, the timing of hunting is regulated in each region, and hunting starts earlier in the southern regions and follows the migration of geese to the north. As a result, migrating geese may be in the hunting zone during the entire spring migration. Using GPS-GSM-tracks of 290 birds and collecting information on hunting timing in Russian regions, we calculated the migration parameters in connection with the impact of hunting. From 2016 to 2022, birds began to cross the Russian border earlier - from May 3 in 2016 to April 30 in 2022. Birds spent 7 days of their migration under hunting. The average duration of stopovers did not differ between hunting and non-hunting periods and was 7 days. The average speed at stopovers did not differ depending on hunting and was 1.2 km/h. However, it increased from 0.9 in 2016 to 1.4 km/h in 2020 at stopovers with hunting. At stopovers without hunting, the speed increased from 1.1 in 2016 to 1.5 km/h in 2020. Thus, birds do not spend the entire migration under hunting, and the basic characteristics of stopovers are similar in hunting and non-hunting periods. Nevertheless, hunting increases disturbance that affects birds' behavior.

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POSTER_30 CARTOGRAPHIC MODELLING OF THE BLACK GROUSE (*LYRURUS TETRIX*) SPATIAL DISTRIBUTION USING WINTER ROUTE ACCOUNTS

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Utilizing data from the Department of Wildlife Conservation (Novosibirsk Region, Russia), we accessed a comprehensive dataset encompassing nearly 800 winter route accounts spanning nine years (2009–2011, 2013, 2014, 2016–2019). Each of these 10-kilometer routes was surveyed during January and February within the ecological contexts of the forest and forest-steppe regions situated in the southern expanse of Eastern Siberia. These accounts yielded valuable information regarding black grouse encounters, quantified as the number of bird sightings per kilometer. To generate comprehensive insights, we employed spatial data analysis techniques. Initial linear datasets were subjected to spatial interpolation (MapInfo Professional & Vertical Mapper plugin). The Natural Neighbour interpolation was applied, known for its efficiency in representing raw data distributions. Both annual spatial distribution maps and mean maps were calculated over multiple years, specifically utilizing the geometric mean. These visualizations elucidated persistent zones of elevated black grouse abundance as well as fluctuations between consecutive years, highlighting areas of increased or diminished winter abundance compared to the preceding year. Comparative analysis across the temporal spectrum unveiled substantial annual variations in the spatial distribution of black grouse populations. Nonetheless, certain locales consistently exhibited heightened black grouse abundance. The confluence of two critical factors, open fields alongside adjacent forested areas and minimal human disturbance, was identified as the key determinant behind these sustained high-density populations. Consequently, the apex of abundance was consistently observed at an approximate distance of 30 kilometers from major urban centers and regional highways.

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