

AKRIOTIS, T., ALBAYRAK, T., KIZIROGLU, İ., ERDOGAN, A. AND TURAN,
L. (EDS.)

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MYTILINI, GREECE

8-11 APRIL 2010

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2010

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Evolution on islands: phenotypic and genetic responses to habitat heterogeneity

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A common pattern on islands is species impoverishment which is the most obvious component of the so-called insular syndrome. However, species impoverishment does not necessarily mean that biodiversity is lower than on nearby mainland because species are not the sole currency of biodiversity. Scanning several components of biodiversity across scales of time and space in the Mediterranean archipelago reveals that a long-lasting evolution in islands which have been isolated from mainland for a very long time led to odd assemblages of unique animals, especially among mammals. For example if non flying mammals were not quite diverse on Mediterranean islands before they were invaded by humans, they included endemic species that evolved striking adaptations to insular environments. Although dwarf elephants and hippos are emblematic of striking animal assemblages which occurred in Mediterranean islands before they were invaded by humans, a good wealth of paleontological data report on many species of birds that are now extinct. At much smaller scales of space and time, a high phenotypic variation of many morphological and physiological traits has been reported in insular populations of birds compared to their mainland counterparts. This suggests that local adaptation might produce high levels of biodiversity at the level of populations. In highly mobile organisms such as birds, the homogenizing effects of gene flow are supposed to prevent adaptive differentiation at spatial scales that are smaller than the dispersal range of individuals. However, island-specific traits such as low dispersal, sedentariness, high site fidelity, strong philopatry and assortative mating have often been reported in insular birds. These traits may be conducive to local population differentiation at much smaller spatial scales than on mainland regions whenever divergent selection pressures are strong enough to counteract the homogenizing effects of gene flow. Comparing the phenotypic and genetic variation of a series of populations of blue tit *Cyanistes caeruleus* in two similar landscapes, one on the mainland in southern France and the other on the island of Corsica I will show how and why genetic and phenotypic variation is much higher on the island than on the mainland.

Keywords: Evolution, islands, gene flow, adaptation, Mediterranean

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A mtDNA perspective on endemism in Caucasian forest avifauna

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The Caucasus is an internationally recognized hotspot of avian endemism. Three species are endemic to the Caucasus: the Caucasian Snowcock (*Tetraogallus caucasicus*) which lives in alpine habitats, and the Caucasian Grouse (*Lyrurus mlokosiewiczii*) and Caucasian Chiffchaff (*Phylloscopus lorenzii*) which inhabit the high-elevation forest and timberline zone. Furthermore, in the Caucasus, 2/3 of European birds are represented by endemic subspecies providing additional evidence for the unique evolutionary history of the Caucasian avifauna. We surveyed the level of mtDNA divergence between Caucasian and European populations in 20 forest species (6 migratory and 14 resident). Only three migratory and one resident species (20%) exhibited no geographic structuring and appear not to have experienced population contraction during the Last Glacial Maximum. Four additional resident species (20%) were not geographically structured but experienced a postglacial population expansion. Three migratory and four resident species (35%) showed significant geographic structuring with low amounts of recently re-established gene flow. In five resident species (25%) Caucasian and European populations were reciprocally monophyletic with the divergence levels similar to the recognized Caucasian endemics. Our results show that the level of endemism in Caucasian avifauna is underappreciated and that resident forest species should become the conservation priority in the region.

Keywords: Caucasus, endemism, avifauna, mitochondrial DNA, conservation

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Hunting impact assessment on population of Eurasian and Demoiselle Cranes in the Kurram Valley, Pakistan

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Three species of cranes including Siberian crane (*Grus leucogeranus*), Eurasian crane (*Grus grus*) and demoiselle crane (*Anthropoides virgo*) migrated through Pakistan until 2002 when the central population of the first one was reported extinct. In addition the resident sarus crane (*Grus antigone*) occurring in Sindh province is also believed to be extinct from the country. The population of the other two species has also decreased tremendously in the Kurram Valley, which has been known as a traditional migrating corridor of cranes in Pakistan. Crane Hunters of the Kurram Valley believe that the decline that has occurred in the populations of migrating cranes through the Valley is due to a change in their migration route rather than being caused by hunting. They attribute the change in migration route to the war in Afghanistan and drought; they do not believe that their centuries old tradition of crane hunting (live trapping) may have contributed to this decline. To determine the impact of hunting on the crane populations migrating through the Kurram Valley, I have constructed a simple deterministic model adapted from a population viability model for sandhill cranes (*Grus canadensis*) used by Miller et al. to assess the impact of hunting pressure on these cranes in North America. The presentation and paper will discuss the structure of the model, its findings and application in the field of ornithological studies.

Keywords: cranes, Pakistan, Kurram Valley, Ahmad, Claire

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Status of the avifauna of Iran including new records of bird species

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With an area of approximately 1,648,000 square kilometers, Iran is nearly as large as Iraq, Syria, Kuwait, Jordan, Bahrain, Lebanon, United Arab Emirates, Yemen, Oman, Azerbaijan, Armenia, and Georgia all combined. Iran's size, and its situation that support a rich and diverse avifauna totaling approximately 517 species a consequence of the diverse range of habitats found across a very broad altitudinal range (from 26 m below sea level to 5600 m). Iran's strategic location in the Palearctic faunal region, and at the convergence of three major faunal regions, the Palearctic, the Afro-tropical, and the Oriental realm, extremes of climate, and variety of geographical features have endowed the country with a wealth of Flora and Fauna unequalled in any other parts of the Middle East. Three hundred and twenty five bird species are known to have bred in Iran. The country also spans an important migration flyway and stopover zone for many bird species that bred to the north and east, and winter in Africa and Arabia to the southeast. Twenty three bird species are considered globally threatened with extinction and ten are near threatened bird species. Two species which were abundant formerly (Lesser White-fronted Goose *Anser erythropus* and Slender-billed Curlew *Numenius tenuirostris*) have not been observed since 10 years ago. However, one species Namaqua Dove *Oena capensis* was identified a few months ago is the first record in Iran.

Keywords: Status, bird record, bird species, Namaqua Dove, flyway

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Phylogeography and population structure of Krueper's Nuthatch (*Sitta krueperi*) based on microsatellites and mitochondrial DNA

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The Krueper's nuthatch (*Sitta krueperi*) inhabits mainly the Anatolian Peninsula and it is associated with coniferous forests. Here, sequences of the mitochondrial cytochrome oxidase subunit 1 gene (605 bp) and eight microsatellite loci were analyzed in order to infer the genetic and phylogeographical structure of five populations in northern and southern Turkey. A total of ten haplotypes were found among 68 individuals. Our results revealed two distinct groups of populations in northern and southern Turkey. Furthermore, nuclear microsatellite data suggest an ongoing incipient speciation process among these populations. This genetic structure pattern may be linked to isolation processes of these populations in different glacial refuges. Our data may have implications for future conservation strategies of this 'near threatened' species

Keywords: *Sitta krueperi*, Krueper's Nuthatch, Anatolia, population genetics, evolution

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**Preliminary bird fauna's monitoring in two future wind farms areas
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Our paper presents the results of one year regularly monitoring (November 2008 – October 2009) in two future wind farms locations from Vaslui County: Deleni and Bogdanita. Our study was focused on the birds and bats' monitoring, but also on the identification of the principal habitats inside and in the vicinity of these perimeters, establishing the habitats' importance for birds and bats. Regarding the birds' monitoring studies we had assess the bird fauna's diversity and the birds' population dynamic during the seasons. We identified the feeding and hunting territories for the breeding bird species. We paid our efforts mapping the hunting territories used by the raptor bird species during the wintering, migration and breeding time, in order to assess the impact of the future wind farms on this group. We focused, too, on the daily birds' movement in the area. We had an unexpected collision situation of small passerines (five species) with the wires that were fixing the pillars with the winds' measurement apparatus in the Deleni site, only in the first part of the breeding season, trying to explain these collision incidents. We recommended some solutions in order to minimize the risks for birds after the wind farms' development.

Keywords: bird monitoring, wind farms, impact

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Status and number of White-headed Duck (*Oxyura leucocephala*) and effective factors on its distribution in Turkey

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In this study, population density of the White-headed duck (*Oxyura leucocephala*) which is one of the globally threatened species, were investigated between 2007-2009 at Lake Burdur, Van Lake Basin (Lake Erçek, Lake Sodalı (Arin), Lake Norşin) and Sultan Marshes. It was determined that preference of the species in wintering area was lack of dense reeds in the lakes not freezing incompletely and its shore. The species prefers to breed habitats having the tall and dense reeds (*Phragmites* spp. and *Typha* spp.) It was determined that the number of the individuals at the study areas was effected by environmental factors. Especially in recent years, the species was not observed in Sultan Marshes, because of the habitat degradation. The ecological factors (temperature, precipitation etc.) were correlated with breeding and distribution of the population. The results of our study showed that maximum individual numbers were 1220 at Lake Burdur, 675 at Lake Arin, 37 at Lake Norşin and 29 at Lake Erçek. The most important threat factors of the species are habitat destruction, anthropological impressions, climatic changes, water level changes and pollution. Especially it is important to protect wetlands living the species and to hinder hunting for preventing of deteriorating of population.

Keywords: White-headed duck, Lake Burdur, Van Lake Basin, Sultan Marshes, Turkey

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Wintering site fidelity and phenology of stay of waders in their winter range

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In 2007-2009 virological samples were collected from wetland birds in Indonesia in the framework of Wildlife Conservation Society (WCS) Global Health Program projects on studying avian-borne diseases. Most effort was spent capturing waders on sandy beaches near the Cemara village in Jambi province, Sumatra (01°25.769' S, 104°27,297' E). During 203 days of fieldwork, 2084 individuals of 21 wader species were captured. The birds were mist-netted at night during high tide without song playback. Most birds were captured on moonless nights during spring tide. Most common waders captured were the Mongolian Plover (681), Common Redshank (543) and Terek Sandpiper (350). Of special interest are the captures of Nordmann's Greenshanks (16.02.2008, 23.03.2009) and Swinhoe's Snipes (9 birds in two seasons). A total of 9 resightings from stopover sites were obtained from waders colour-flagged in Sumatra. A total of 3,6% Mongolian Plovers, 8% Greater Sand Plovers, 5,5% Common Redshanks, 6,8% Common Sandpipers and 1,4% Terek Sandpipers marked in winter 2007-2008 were recaptured in the subsequent season. The minimum duration of stay in winter quarters inferred from recaptures was 123 days for the Mongolian Plover, 114 days for the Common Sandpiper, 110 days for the Terek Sandpiper and 97 days for the Common Redshank.

Keywords: wintering, waders, colour-flagging

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Management of the Mallard (*Anas platyrhynchos*) population in the Veselovsky Reservoir (south-west of Russia)

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The Mallard *Anas platyrhynchos*, a game species, is the most popular quarry species for hunters in the south of European Russia. It is important not only to sustain its local population, but also to increase the density of this species in the hunting areas. Long-term research revealed a strong trend towards the decrease of the local Mallard population in wetlands of the Veselovsky reservoir. In this connection, it was necessary to carry out actions on its regeneration in hunting sites. The method used for of conservation and reproduction is the attraction of ducks to an artificial shelter* for nesting and farm cultivation** with subsequent introduction of ducks into the wild. A farm for artificial breeding of wild ducks was established in 2005. The number of ducks released into the wild (the water reservoir) by the beginning of the hunting season reached 32 thousand ducks in three years of farming. Different methods were developed to protect the wild duck population and to enrich the hunting area with artificially bred ducks. Ringing of released[?] ducks showed that one third of the number of ducks shot by hunters was farmed birds. Studying the naturalization of farmed Mallards in natural landscapes revealed many of the features of their dispersion, breeding, feeding behaviour, etc.

Keywords: Mallard, *Anas platyrhynchos*, population management

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Where do Moustached Warblers (*Acrocephalus melanopogon*) breeding in the Carpathian Basin spend the winter?

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The Moustached Warbler (*Acrocephalus melanopogon*) population breeding in the Carpathian Basin is short-distance migrant, known to spend the winter in the Mediterranean region. Due to lack of specific capture-recapture data, most of the potential migration routes and exact wintering sites were not verified whether those sustain migrating and wintering populations or not. Between 2002 and 2009, 9 ringing expeditions were organized during winter months, resulting in 208 days spent on the field and in 1361 individuals captured in total. With 25 individuals recaptured at wintering sites having been ringed in the Carpathian Basin earlier, we could add new data on different aspects of wintering strategy of the investigated population. Recapture data suggest that the population breeding in the Carpathian Basin spends the winter in a wide belt along the Mediterranean shores from Camargue to the Western shores of the Balkan Peninsula. The East shoreline of the Balkan Peninsula sustains wintering populations of the Moustached Warbler as well, but those are of different breeding areas. The most threatening factor to the investigated population seems to be the loss of suitable wintering sites.

Keywords: Moustached Warbler, *Acrocephalus melanopogon*, wintering sites, habitat loss, capture-recapture

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Large-scale monitoring of bird migration – the potential of different radar systems

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How the migratory behaviour of many bird groups has changed in relation to global changes is a much-investigated topic. Although many studies on the individual level have already provided valuable information, such studies are usually restricted to single species or populations, short periods and/or comparatively small areas. Complementary information can be provided by radar studies. Recently, new methods have been developed that allow for the automatic extraction of bird movement data from weather radar. Such radars are operating all over Europe, but the information is not yet available for biological research. Furthermore, different radar types have been adapted specifically to detect birds. Data processing has been improved by computer programs with automatic classification of various bird groups. If radar systems can be combined and linked with visual ground observations, the migratory movements of many bird groups could be followed over long periods and over large geographic areas. Migratory flight behaviour could be quantified and thus, providing the basis for important fundamental insights into the drivers and determinants of bird migratory movements but also for (future) conservation actions. The first results obtained with this approach showed the feasibility of such large monitoring studies and their potential to be extended even on continental scales. However, the success of such endeavour will largely depend on a cooperative course of action, e.g. within international and interdisciplinary task forces.

Keywords: bird migration, large scale monitoring, weather radar, surveillance radar, automatic detection

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Heron and egret colonies in Greece, 2009

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Estimating the size of breeding population of colonial nesting ardeids is a priority for their conservation. During 2009 the second survey of heron and egret colonies in Greek wetlands was completed. At least 44 active heron colonies were recorded. Most of them were distributed in northern and western Greece and at least 22 were situated in Special Protection Areas. A total of 6097 pairs of seven species were counted. Little egret *Egretta garzetta* was the most abundant species counting 2549 pairs in 21 colonies followed by Grey heron *Ardea cinerea* (1484 pairs in 30 colonies). Night heron *Nycticorax nycticorax* (1325 pairs) was recorded nesting in 17 colonies, Squacco heron *Ardeola ralloides* (562 pairs) in 10 colonies, Great white egret *Ardea alba* (121 pairs) in three colonies, Purple heron *Ardea purpurea* (45 pairs) in 11 colonies and Cattle egret *Bubulcus ibis* (11 pairs) in two colonies. At least 16 colonies were situated near freshwater lakes, 14 along rivers while 8 were at sea coast. The rest were distributed at river estuaries (4) and one it was in reedbeds at an irrigation canal. At least 22 colonies were mixed (2-6 species) and 13 of them included other, non-ardeid, colonially breeding species. Wetland degradation and disturbance are considered the main threats to colonies.

Keywords: Ardeidae, colonies, Greece

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Fish size structure versus habitat selection by breeding waterfowl

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Fish may significantly affect habitat use by birds, either as their prey or as competitors. Fish communities are often distinctly size-structured, but the consequences for waterbird assemblages remain poorly understood. We examined the effects of size structure of common carp (*Cyprinus carpio*) cohorts together with other biotic and abiotic pond characteristics on the distribution of breeding waterbirds in a semi-natural system of monocultured ponds, where three fish age classes were separately stocked. Fish age corresponded to a distinct fish size gradient. Abundance of animal prey other than fish (aquatic macroinvertebrates and larval amphibians) and water transparency decreased with increasing carp age in the ponds. Densities of ducks and smaller grebes were strongly negatively associated with fish age/size gradient. The largest of the grebes, the piscivorous Great Crested Grebe (*Podiceps cristatus*), was the only species preferring ponds with medium-sized fish. Habitat selection by bitterns and most rallids was instead strongly influenced by the relative amount of emergent vegetation cover in the ponds. Our results show that fish size structure may be an important cue for breeding habitat choice and a factor affording an opportunity for niche diversification in avian communities.

Keywords: waterbird assemblages, distant competition, habitat selection, size-structured interactions, niche diversification

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Preliminary results on the molecular sexing and mtDNA variation of *Phalacrocorax aristotelis desmarestii* from a N. Aegean colony.

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A Mediterranean shag (*Phalacrocorax aristotelis desmarestii*) colony from the North Aegean (islet of Xironisi, Kavala, Greece) was periodically visited during the reproductive period of 2009, as part of a wider study regarding the population genetics and reproduction ecology of the subspecies in Greece. Blood samples were taken from 27 hatchlings, representing the 21 accessible nests of the colony. Muscle samples from three adults, found dead in fishery gear within 30-40 km from the Xironisi colony, were also taken. Genomic DNA was extracted from all samples and was PCR-amplified in order to a) determine their sex and b) examine their genetic variation. Since this species is sexually monomorphic, we conducted molecular sexing of all samples using two sets of primers: the CHD upstream (1237L/1272H) and the CHD downstream (2550F/2718R). Molecular sexing has received criticism in the past due to its low descriptiveness between heterozygous males and females. Thus, the sex of the three adults was confirmed by autopsy and the reliability of each set of primers was evaluated. Additionally, partial sequencing of a control-region segment (approx. 450 bps) was performed in all samples and the first results on the mtDNA variation within the colony and in comparison to neighboring ones are presented. *This study was supported by the Hellenic Ornithological Society through the LIFE07NAT/GR/000285 project.*

Keywords: *Phalacrocorax aristotelis desmarestii*, Greece, sexing, mtDNA variation

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Planktivorous Little Auk (*Alle alle*) as an indicator of changes of marine conditions in the high Arctic

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Seabirds are often considered as sensitive indicators of changes of marine conditions. Little Auk (LA) is planktivorous colonial seabird breeding in high Arctic. This region is currently undergoing a dramatic climate change. LAs, to cover their extremely high energetic demands, focus on energy-rich zooplankton associated with cold water, which due to climate changes, is replaced by less profitable counterparts associated with warm water. Studies performed in seasons and areas of Spitsbergen differing in water temperature and zooplankton community demonstrated flexibility of LA time and energy budget. Energetically less valuable food delivered to chicks in warmer years/areas were compensated by higher number of feeds. Parents spent more time foraging. This indicates that LAs in warmer seasons/areas are forced to spend more time on searching for preferred food in suboptimal conditions and/or to fly to distant foraging grounds. LAs respond to climate change also by advancement of breeding as their nests are now available earlier due to advanced snow melting. With further climate amelioration we can expect worse LAs feeding efficiency caused by change in sea currents distribution and zooplankton quality / quantity, and gradual decrease of breeding success and displacement of their breeding range towards colder north-east areas.

Keywords: Little Auk, Spitsbergen, zooplankton community, climate change

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Distribution of the woodpecker species in Turkey and their importance in terms of biological control

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Turkey, with approximately 500 bird species, has a relatively rich avian diversity in Europe. Among the birds of Turkey are included 8 Woodpecker species. They are the members of Picidae family. The number of Studies on these family members in Turkey is relatively low and little known about their distribution and their role in biological control. There are only two known studies on this subject. On the other hand, forest pests constitute major problems for the forests of Turkey. Here, in this study the distribution of Woodpecker species in Turkey and their important roles in biological control were investigated. For this, studies conducted by us and other researchers have been realized between the years 2002-2009 has been used.

Keywords: woodpeckers, Picidae, biological control, distribution, Turkey

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Phylogeography of the house sparrow (*Passer domesticus*) in the Palearctic region

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The house sparrow is the most widely distributed land bird species in the World. Its large natural distribution in Europe, Asia, and North Africa was probably facilitated by commensalism with human agriculture that expanded from the Middle East from about 10,000 years ago. It has been suggested that before the advent of agriculture an early glacial advance resulted in two disjunct ranges of house sparrows; in the Middle East and on the Indian subcontinent. According to this hypothesis, differentiation during this period of isolation resulted in the two major subspecific groups (the domesticus group and the indicus group). We sequenced 720 bp of the D-loop from the mitochondrial DNA control region from 103 house sparrows collected from 23 regions (14 countries) across the Palearctic distribution. No differentiation between the traditional indicus and domesticus groups was found in our analyses, indicating that the morphological differentiation between the domesticus and indicus groups may represent recent ecological adaptive divergence rather than ancient glacial isolation. Low levels of population differentiation as well as low genetic variation within populations is in accordance with a recent event of population expansion, possibly from one main source area in the Middle East where agricultural societies first arose.

Keywords: molecular genetics, mtDNA, phylogeography, phylogenetics, biogeography, *Passer domesticus*

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Avian Influenza surveillance in wild birds in Turkey

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Turkey has experienced outbreaks of H5N1 HPAI in domestic poultry every year since October 2005. To understand the role of wild birds in these outbreaks several projects were carried out by Ondokuz Mayıs University Ornithological Research Center and Bird Research Society which were internationally coordinated by Wetlands International and FAO. The main objective of these projects was surveillance of wild birds for AI through collection of cloacal and oropharyngeal swab samples. Adana Yumurtalık Lagoon, Ankara Nallıhan Birdparadise and Samsun Kızılırmak delta were the sampling sites. Target species were mainly waders and water birds. In total 758 birds from 44 species were sampled. Birds were ringed, measured, weighed and released after sampling. The sampled bird species showed negative results for high pathogenic AI. To see if there is connectivity and if the wild birds play a bridge role with domestic poultry continual and regular sampling of wild birds for AI is important.

Keywords: Avian Influenza, sampling wild birds, HPAI H5N1, Turkey

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Orientation behaviour of Red-backed Shrikes and Blackcaps in a 3-D orthogonal nested Helmholtz coil system: evidence for the use of both inclination and polarity compass mechanisms

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The geomagnetic field is a ubiquitous source of information for orientation and navigation, as it provides birds with a compass reference system as well as a gradient/contour map information. It however remains unclear how birds use this magnetic information when making orientation decisions, as their two independent magnetic compass mechanism can even provide directionally conflicting information. We present the results of our orientation study of juvenile Red-backed Shrikes (*Lanius collurio*) and Blackcaps (*Sylvia atricapilla*) based on repeated measures of the same individual exposed to reversals of the vector of the magnetic field created by a 3-D orthogonal nested Helmholtz coil system. While the reversal of the vertical component of the field didn't elicit changes in bird orientation relative to the magnetic north, the 180° rotation of the horizontal component of the field did, and so did the simultaneous rotation of both components of the field. These results contradict the currently accepted view that birds rely solely on inclination compass information, and suggest the involvement of a polarity compass in orientation decision making. The study also describes idiosyncrasies in orientation behaviour and points out the caveats of simplifying a three-dimensional geomagnetic field into a two-dimensional frame of reference when interpreting bird orientation behaviour.

Keywords: bird, magnetic, orientation, polarity, compass

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Admixture of different mitochondrial DNA clades of forest species in Balkan region.

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The Balkan region is traditionally known as the main refuge during Ice ages for most of the European plants and animals. After periods of glaciations recolonization of northern parts of the European continent from Balkans went in several directions depending on organism mobility and presence of suitable habitat to the north. It appears that the Balkans were a source for majority of species of plants and animals in the east and for many species in the west. After expanding their ranges from separate glacial refugia these diverged genomes meet and form “suture” zones. These “suture” or “admixture” zones appear to cluster in the Alps and central Europe, and to some extent in the north Balkans and Pyrenees. The aim of this study is to test admixture zone in Balkan region using ND2 mitochondrial gene. In total we sequenced the mitochondrial ND2 gene for 110 specimens for four species (*Sylvia atricapilla*, *Phylloscopus collybita*, *Troglodytes troglodytes* and *Parus ater*) collected in Balkans, Caucasus, Central and Eastern Europe. The sequences were used to reconstruct the phylogeographical history of these species using maximum likelihood analysis. We discovered admixture zone in Balkans for following species *Phylloscopus collybita* - three distinct mitochondrial clades *Sylvia atricapilla* - two distinct mitochondrial clades *Troglodytes troglodytes* - two distinct mitochondrial clades *Parus ater* - two distinct mitochondrial clades Our data suggest that the Balkans represent a very complex admixture zone regarding forest bird species and more data from surrounding regions is needed to resolve historical events and dispersion routes of birds in Southern Europe.

Keywords: forest birds, Balkan region, mtDNA, phylogeography, ND2

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The migration of Eastern European Black Storks (*Ciconia nigra*) through Turkey and Israel, based on Hungarian satellite tracking, ring recovery and observation results

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We have been working on the research of the Black Stork (*Ciconia nigra*, Linnaeus, 1758) since 1992. Besides studies carried out in Hungary about habitat choice, reproduction success and diet of the species, we have been involved in the international colour ringing programme since 1994. During the 15 years of this research, more than 1000 Black Storks were colour ringed in Hungary. In 2005, we participated in the Flying Over Natura2000 project, in frame of which two adult Black Storks nesting in Hungary were tracked together with 18 others. Both of the satellite tracked birds from our country used the eastern flyway (which goes through the Balkan Peninsula, Turkey and Israel). There are 3 ring recovery reports of Hungarian Black storks in Turkey, 1 in Egypt, 1 in Ethiopia and 242 in Israel up to date. The migration tracks revealed by the satellite study, the ring recoveries, furthermore our own field observations in Turkey on 18 expeditions between 1993 and 2009 are analysed in this study, revealing the most important stopover sites of the Black Storks along the migration route, and comparing these result with the findings of earlier studies based on the review of publications.

Keywords: Black Stork, *Ciconia nigra*, eastern migratory flyway, stopover places, wetlands

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Restoration of the Houbara Bustard *Chlamydotis macqueenii* population in the Kingdom of Saudi Arabia

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The Saudi Arabian Houbara bustard breeding programme was started in an attempt to restore the population of this native species after the breeding population virtually disappeared. The re-introduction of captive birds to the wild would be critical for the survival of the houbara population. During 1986 to 1988 fertile eggs were collected from resident populations in the Baluchistan in Pakistan. Two sites were selected for Houbara re-introduction sites Mahazat as-Sayd and Saja Umm Ar-Rimth protected areas in Saudi Arabia. In Mahazat as-Sayd protected area since 1991 a total of 781 Houbara have been released with 374 males and 407 females. Out of the 781 Houbara released in Mahazat, 133 died within the first month of their release and a total of 648 have survived. Mortalities were mainly due to mammal predation and a small number because of starvation. The re-introduction programme in Saja Umm Ar-Rimth Protected Area was started in 2003. By 2006 a total of 145 Houbara bustard had been released with 67 females and 78 males. In Saja around 35 houbara are surviving till 2009. Most mortality was due to predation by mammals (foxes and cats), some cases are of starvation and poaching also. The total Houbara population in the protected area is calculated using a number of parameters including the number of birds released, number of wild born chicks and number of birds that have died post release. The current population of houbara in Mahazat as-Sayd Protected Area is estimated at around 250 individuals. Houbara densities were also assessed using three methods. The methods were observations during car driving transect, observation on circular points and by calculating the number of houbara radio tracked during the month divided by the size of the all area they used (Kernel 95 method) and the minimum density of houbara in 2006 was 0.367 individuals per km².

Keywords: Houbara Bustard, *Chlamydotis macqueenii*, reintroduction, restoration, Saudi Arabia

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Habitat selection when the landscapes are anthropogenic: does preference still match adaptiveness?

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Habitat selection is assumed to be an adaptive behavioural trait. Quick decisions in this behaviour have to be taken, and environmental cues can help to achieve this. Migratory birds are especially concerned by the use of such cues, as they are often time-constrained in the choice of a suitable breeding habitat. In anthropogenic landscapes, where changes occur rapidly, cues may become decoupled from the underlying habitat quality, leading to ecological trapping. Using the Red-backed shrike (*Lanius collurio*) as model species, we studied during two years habitat selection patterns in intensively human-altered landscapes, composed of a mixture of agricultural and forest habitats. These last ones have recently been invaded due to forest management, probably mimicking strongly the species original habitat. Based on our results, we show that habitats in forest landscapes are preferred, but this choice infers some negative effects on both number and quality of nestlings. When trying to explain these effects, we show that predation rates are more present in forest landscapes, and that food resources and microclimate are less favourable, potentially interacting with fitness components. Therefore, we will try to determine which mechanisms involve behavioural mistakes in habitat selection, both from a conceptual as conservational point of view.

Keywords: habitat selection, anthropogenic, fitness, ecological trap, *Lanius collurio*

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Malaria infection and moult speed: connectivity in a migratory bird

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The moult speed of birds has energetic and aerodynamics implications because during the time of moult individuals have a reduction in thermoregulation and flight performance. Therefore birds should moult fast to reduce the moulting period. Also, migratory individuals moulting faster could arrive earlier to breeding quarter and, consequently, increase their reproductive success. Migratory birds spend different periods of time of their annual cycle in separated and ecologically disparate locations. The essential idea of migratory connectivity is that individuals could carry over effects from one season to the next. House martin (*Delichon urbica*) is a migratory passerine which moult their feathers in Africa during winter and suffer a high impact of blood parasites infection. Since the speed of moult has been related to body condition, we hypothesize a migratory connectivity between malaria infection and speed of moult in Africa and breeding success in Europe in house martins. Our results showed that infected house martins spend more days in moulting and arrived to their breeding quarters and bred later than non infected individuals, having negative consequences in their breeding success. In addition, winter environmental conditions and age of the bird significantly affected the speed of moult.

Keywords: moult bars, migration, malaria parasites, breeding success

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Earlier breeding as a response to climate change? Comparison between a short-distance and a long-distance migrant bird species

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There is increasing evidence that current large-scale climate change has various impacts on species. Migratory bird species seem to respond to the warming environment by advancing their spring migration and reproduction timing. However, not all species seem to be able to follow easily the environmental changes. Most interestingly, short-distance migrant species seem to be more able to adapt their breeding timing than long-distance ones, because climatic conditions on the wintering sites are better predictors for the optimal arrival time on the breeding sites. Here we illustrate an interesting example by comparing the responses of a long-distance migrant species, the Great white pelican, with its short-distance migrant sister species, the Dalmatian pelican. Although they breed in sympatry (north-west of Greece; Lake Prespa) and have similar ecological requirements, the two species showed different trends concerning the timing of their breeding period within a period of 20 years. We used available counting and capture-recapture data for the years 1985 until 2005. An impressive advancement in median first laying dates (35 days in 20 years) was observed for the short-distant migrant and the analysis of capture-mark-recapture data indicated that early born individuals have a higher survival rate than those born later in the breeding period. In contrary, in the long-distance migrant species, we observed no advancement in median laying dates but we reveal that interestingly this species advanced the end of its reproduction which leads to a significant reduction of the duration of the breeding period. Which reasons may drive such a behaviour? Based on our findings and the species biology, we suggest the long-distant migrant species uses the short-migrant species' presence as an indicator for favorable conditions to the breeding grounds. Such examples illustrate some of the various direct and indirect effects that climate change can have on the species biology.

Keywords: climate change, breeding density, migratory species, laying date

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Migration patterns of birds moving through the Arabian Gulf via the Kingdom of Bahrain

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Migration routes of northern breeding species have been identified for all continents. The routes of the North American flyways on the east, west and central zones to and from central and south America are well documented. While the western and central European flyways have also been studied in detail, less is known about the middle eastern flyway. Much of the information has been based on assumption and conjecture. 330 bird species have been recorded in Bahrain in the past 30 years and each year new species are being added. Most of these are passage migrant with a small number of summer and winter visitors staying for extended periods in the gulf. This papers looks at the accumulated records of a selection of migrants based on observations over three decades and ringing data gathered during the past 5 years. It documents the seasonal patterns of species and evaluates the importance of Bahrain and the gulf for migrants based on available data. These data will provide a detailed insight into the way migrants utilize the desert region of Bahrain and the middle east.

Keywords: bird migration patterns, seasonal movements, Bahrain, Middle East

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Captive breeding of cranes in the Kurram Valley, Pakistan and its potential for conservation of cranes

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Local community of Wazir, Marwat and Banuchi tribes in Kurram Valley in Pakistan has developed a culture of keeping demoiselle and Eurasian cranes as their pet birds. This has turned to a social status and norm in the area. During crane migration seasons, they have been camping along the rivers with their decoy cranes to trap cranes from the wild with a weighted cord “soya” since long times. Primarily, they train the trapped cranes as decoys for use in the sport. They, however, sell a part of their catch and gift some to friends and elites. The recent study on crane hunting pressure Khan A. in 2004 showed that there is a developing trend for breeding of the captive flocks. An estimate shows that there are about 8,000 demoiselle and 4,000 Eurasian cranes in captivity in the Valley. Their captive breeding, if promoted, may significantly contribute to the conservation of cranes in the wild. With this objective, the Pakistan Wetlands Programme conducted a study of the current status of breeding of captive cranes and its potential for conservation. The study suggests that a number of crane hunters are breeding cranes to increase their flocks. With incorporation of techniques such as multiple clutching, this could be an alternate to trapping from the wild, provided properly managed. This presentation will highlight the findings of the surveys on captive breeding and the recommendations made accordingly

Keywords: Kurram Valley, Wazirs, Pakistan, Mehsud, Lakki

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The status of Marbled Teal (*Marmaronetta angustirostris*) in Iran

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Marbled Teal (*Marmaronetta angustirostris*) is one of the rare and vulnerable birds throughout the world. More than half of the world population migrate and breed in Iran. According to recent surveys, the population of this bird decreased severely. It is presumably that two factors play an important role in this decrease: variation in the abundance of species among sites within its range; and some remote areas suitable for Marbled Teal to winter or breed in Iran, but have not been covered during the surveys. Iran is a very large country covering many suitable habitats for this bird. However in the past, Marbled Teals were found in some known haunt areas of south west and northern Iran. The recent surveys showed the bird in some new areas, therefore, it seems that Marbled Teal extended its range to some other areas in Iran. The surveys undertaken during the late 2007 and early 2009 and the result is compared with the previous information.

Keywords: Marbled Teal, range extension, population, variation, vulnerable

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Ornithofauna dynamics in the Saratov Region (Russia)

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Our modern survey of the avifauna of the Saratov region has established the presence of 335 species, of which 193 nesting. Reproduction of 21 species is not confirmed by modern surveys but seems quite probable. For the last 150 years the Saratov region avifauna has lost more than 10 species due to anthropogenous and natural causes. At the same time, the list of nesting birds has increased with 18 new species for the same period. At primary comparison of the past and modern species structures of birds an impression is created that its variety in the Saratov region has slightly increased. The opposite directions of the avifauna genesis process, as a whole, compensate the results of each other. Due to negative causes, few endemic species have disappeared from the avifauna of the Saratov region, while it has increased mainly with widespread passerine species. For some last decades, few «new» species have been included in the list of birds of the Saratov region. *Podiceps grisegena*, *Bucephala clangula*, *Mergus albellus*, *Dendrocopos medius*, *Spinus spinus*, and others are referred as to «new» nesting bird species of the Saratov region. Similar examples exist concerning other ecological groups (passage, vagrant, wintering), when, for example, the stay of *Neophron percnopterus*, *Cephus grille*, *Bubulcus ibis*, *Acanthis hornemanni*, *Emberiza leucocephala* and others was reliably confirmed. The results of surveys carried out in the territory of the Saratov region allow resolving five basic types of trends in the ornithofauna dynamics, namely: 1) short-term cyclic oscillations of the number and distribution with no clear relation to the dynamics of climatic parameters; 2) short-term oscillations of the bird number and distribution in the region, showing reliable relation to microclimatic phenomena; 3) long-term trends in the habitat transformation under the influence of macroclimatic trends; 4) short-term and long-term tendencies in the dynamics of distribution owing to anthropogenous influence; 5) predictable and non-predictable mass invasions.

Keywords: bird, distribution, Saratov region

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Migration speed of the Chaffinch, *Fringilla coelebs*, ringed in the eastern Baltic

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An analysis of the speed of autumn migration was based on 224 ringing recoveries from western Europe, selected from 1866 recoveries of the Chaffinch (*Fringilla coelebs*) caught during 1957-1997 at Rybachy Biological station on the Courish (Curonian) Spit, Eastern Baltic. It was found that in all individuals pooled the migration speed varies between 20.0 and 284.8 km/day and the average speed is 53.5 km/day. No significant differences in migration speed were found among different years and between males and females (aged and not aged birds pooled). Adult birds migrate significantly faster than first-year birds. Weak correlation between migration distance and speed of movement in all Chaffinches analyzed and the higher speed of adult birds wintering further south than first-year birds implies the tendency to faster speed in birds that traveled farther. No difference in migration speed was found between early- and late-migrating individuals in contrast to findings in many other migratory species.

Keywords: Autumn migration, Chaffinch, *Fringilla coelebs*, migration speed

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Status and preservation prospects of the *Tetrax tetrax* population in the Saratov Trans-Volga Region (Russia)

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During our field surveys of 2001 – 2008, data on the modern distribution of *Tetrax tetrax* in the Saratov Trans-Volga region were collected. In the surveyed territory, *T. tetrax* prefers sites of restored steppe and virgin lands, however, it is frequently met in agricultural lands, e.g., on winter crops and harvested fields of grain cultures. The highest values of the *T. tetrax* abundance have been noted on restored steppe sites and fields of perennial grass. So, in the nesting period the population density varies from 0.05 ind/km² on grain crops, perennial grass and stepped sites of the northern steppe up to 1.4 ind/km² in typical and southern steppes. In general, the density of the *T. tetrax* population is steadily increased at advancement in the Saratov Trans-Volga territory from northwest to southeast from the typical steppe landscapes to the southern border of dry steppe and semidesert landscapes. The total number of *T. tetrax* in the nesting period within the limits of the Saratov Trans-Volga region, calculated on the basis of route account data, is ~6,000 individuals, and now some growth in the number of *T. tetrax* is observed in comparison with that of the first half of the 1980s. The rather high values of the number and density of the *T. tetrax* population in the Saratov Trans-Volga region speak for the surveyed territory being extremely important for the existence and preservation of *T. tetrax* as a species.

Keywords: *Tetrax*, abundance, biotopical distribution, Saratov region

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The impact of free radicals upon blood morphology of White Stork *Ciconia ciconia* chicks in Poland

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The aim of studies was to establish the interactions between Na, K, Ca, Mg, Fe, Zn, Cu, Mn, Co, Cd, and Pb level upon blood morphology of White Stork *Ciconia ciconia* chicks. We examined red (RBC) and white (WBC) blood cells, hematocrit (Hct), mean cell volume (MCV), mean hemoglobin content of the erythrocyte (MCH) and mean cell hemoglobin concentration (MCHC). These parameters were analyzed with respect to chemical elements (AAS). Blood samples were collected from storks developing in relatively clean environment (control; SW Poland; 52°07'56,3"N, 14°42'10,4"E). They were compared with polluted sites about 20 km away from Zielona Góra (SW Poland; 51°56'26,1"N, 15°30'38,9"E) at distance of several kilometers from city boundary, and near polluted Głogów (51°39'32,6"N, 16°04'49,9"E), where a copper smelter was situated. Samples were also collected at Pomeranian swamps near Baltic Sea (relatively clean areas, N Poland; 54°38'34,5"N, 17°32'31"S). A total of 78 and 87 chicks from 32 and 33 jacks have been surveyed in 2005-2006. The age of birds ranged from 14 to 54 days (2005) and 19 to 54 days (2006). Blood samples were taken via veni-puncture from the brachial vein. Chicks were removed from the nest and placed into individual ventilated cotton sacks. The blood was collected using 5 ml syringe washed with EDTA. Samples were kept in a chilled cooler before transport to the laboratory. After centrifugation, plasma samples were frozen at -20oC. Behavioral and physical examinations suggested that all of birds were physically healthy. Erythrocyte counts were made using a Bürker chamber after staining with Natt and Herrick solution in RBC-diluting pipette. Hct was measured using microhaematocrit method. Hb was determined by Drabkin's

method. Chicks from the Pomeranian were different from others with respect to hematological indices and free radicals; RBC and WBC were significantly lower, whilst MCV and MCH were higher compared with those from remaining sites. Ca and Co concentrations were lower in chicks from Pomeranian, while Mg, Fe and Cu were higher. K, Fe, Cu, Co, and Pb levels were much higher in chicks from polluted (Głogów) than in chicks from other sites. However, the Fe and Cu were higher in chicks from Pomeranian. We noted positive correlations between Fe and Mg and Hct, MCH and MCV. Negative relationships were noted between Cd and these parameters. High Fe and Mg levels coincided with high Hct, MCH and MCV. Simultaneously, negative correlations between Fe, Mg, and K and Hb, RBC, and WBC were found in many cases apart from potassium in polluted region, where those with Cd, Ca, Zn, and Na were positive. However, remaining MCV and MCHC dependencies changed variously with elements. K-RBC relations were negative, whilst K-MCH and K-MCV were positive in chicks from Pomeranian. We suggest that Fe and Mg influenced positively by an increase in Hct, MCV, and MCH, while same elements in addition to K had a negative influence on Hb, RBC, and WBC in young storks.

Keywords: free radicals, blood morphology, White Stork, *Ciconia ciconia*, Poland environments

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The determination of Newcastle Disease Virus by RT-PCR and the isolation of the virus in some avian species in Van Lake Basin (first data*)

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In this study 513 feces samples taken from 22 transit migratory, migratory, winter visitor and native avian species in Van Lake Basin were examined using specific primer and primer sets of Avian Paramyxovirus Tip-1 (APMV1) matrix protein by RT-PCR in respect of Newcastle Disease Virus (NDV). All the feces samples were cultured in specific pathogen-free embryonated chicken eggs (ECE) for virus isolation. For RNA extraction from feces samples, high pure viral RNA (Roche) was used and in cDNA synthesis transcriptor first strand cDNA synthesis kits (Roche) were used. Both kits were used according to the producer's instruction. In order to determine the NDV from cDNA samples, LightCycler TaqMan Master Kit (Roche) and specific primer and primer sets of APMV1 matrix protein (TibMolbiol) were used. RT-PCR study was realized with LC 480 (Roche). Of the examined 513 feces samples, 28 (5.45 %) were found to be positive with RT-PCR. Then the same samples were cultured in ECE, 9 (1.75 %) of them were positive for NDV isolations. It was observed that all isolates reproduced in ECE had the haemagglutination (HA) activity and that their titers varied from 1/32 to 1/1024. It was also determined that all viruses were inhibited by APMV1 antisera in haemagglutination inhibition (HI) test. While the seven of isolates were isolated from feces of transit migratory, migratory and winter visitor wild avian species belonging to *Phoenicopterus ruber*, *Anas clypeata*, *Aythya ferina* and *Aythya fuligula*, two of them were isolated from *Columba livia*, a native species.* This report was summarized using the data obtained from an incomplete research.

Keywords: Newcastle disease virus, Wild birds, RT-PCR, APMV1

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Time-activity budget of wintering Great Grey Shrikes (*Lanius excubitor*) in Bulgaria

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This study was conducted on Great Grey Shrikes (*Lanius excubitor*) wintering in the high fields of Central Bulgaria, placed in between mountain ranges. Time-activity patterns and lookout post use were studied in detail, both in relation to presence or absence of snow cover and 3-hour daily time zones. Typically for a sit-and-wait predator, most of the time was spent perching on a branch – nearly 93%. Among the comfort behavioural patterns, those dealing with preening and feather arrangement occupied most of the time – nearly 82%; least time was taken by pellet regurgitation and body stretching (less than 1% each). In lack of snow cover the species spent 7 times more time in comfort behaviour activities compared to snowy conditions. Except for the defecation activity, no other correlations were found in relation to the day length. Successful ground hunting attempts took on average longer time (11.3s) compared to the unsuccessful attempts (9.96s). In the morning and early afternoon the successful ground hunting attempts with catching insects significantly predominated over those involving rodents. Most of the time (91.4%) the birds spent sitting on the uppermost parts of trees and bushes, thus having good visibility for potential prey and predators around. The mean number of perching sites changes per hour was 14.2; the species was almost twice more active in the early afternoon compared to the time before dusk. *Lanius excubitor* happened to change the lookout posts almost twice more often in snowy conditions (22.9 times/hour) compared to weather without snow cover (13.1). In snowless conditions the species used topmost parts of lookout posts less than 10m in height in 74% of the time, in presence of snow cover – 96.5%. In lack of snow *Lanius excubitor* tended to use higher perch sites.

Keywords: Great Grey Shrike, *Lanius excubitor*, time-activity patterns, lookout posts use, Bulgaria

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A magnetic compass in both eyes

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Several studies have suggested that the magnetic compass of birds is located in the right eye only. However, here we show that two night-migrating songbirds, namely garden warblers (*Sylvia borin*) and European robins (*Erithacus rubecula*), are able to perform magnetic compass orientation with both eyes open, with the left eye open only, and with the right eye open only. We do not observe any clear lateralization of magnetic compass orientation in these migratory songbirds, and therefore, it seems that the suggested all-or-none lateralization of magnetic compass orientation towards the right eye only cannot be generalized to all birds, and that the answer to the question whether magnetic compass orientation in birds is lateralized is probably not as simple as suggested previously.

Keywords: lateralization, magnetic, compass, eye

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A step forward into the unveiling of Eleonora's Falcon (*Falco eleonorae*) autumn migration route: new satellite data from individuals originating from a colony in the Aegean Sea (Greece).

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Eleonora's Falcon (*Falco eleonorae* G n , 1839), a medium sized raptor breeding in the Mediterranean Sea and off the Atlantic coasts of North Africa, has long attracted scientists' attention. The species' migration patterns have puzzled them for years. During the last decade, the latest technological advances in satellite telemetry have enabled scientists to obtain data of great accuracy regarding the migratory journey of the species, from breeding colonies located in Sardinia and the Balearic islands to the wintering sites in southeastern Africa. Due to these findings, the historical route of Eleonora's falcon, described in the late 70s, has been revised, and further scientific questions have been raised. By toeing the line of the former studies, last summer we tagged 2 adults and 2 juveniles with light solar powered transmitters, originating from one of the eastern breeding colonies located in the Aegean Sea. The satellite data we gathered will allow us to compare the migratory route, first, between the two age groups, second, among individuals from geographically distinct colonies, and, finally, to gain more insight on the navigation method the species applies during the long journey to its winter grounds. Here we present the preliminary results of our research.

Keywords: *Falco eleonorae*, migration, solar transmitters, Aegean Sea

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Nest-site selection of Eleonora's Falcon (*Falco eleonora*) at the nesting territory level: modeling the species' presence in the Aegean Sea (Greece).

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Habitat suitability modeling, a rapidly developing research field in ecology, has allowed the assessment of the relationship between the presence of a species and the environmental factors in a given geographic area. Moving a step further, habitat suitability modeling has enabled the construction of maps predicting the species' presence both at a spatial and temporal level, a powerful tool in conservation biology. Eleonora's falcon (*Falco eleonora* Gén , 1839) has been known for its particular nesting preferences. The common feature among the most common nest types that have been described for the species from various colonies is the fact that they provide shelter from adverse weather conditions and from potential intruders. We therefore used topographic parameters that are expected to play a key role in the formation of a suitable nesting site to model the species' presence in breeding colonies. Presence data were gathered during a monitoring scheme on 12 Aegean islets, in the framework of a Life project undertaken by the Hellenic Ornithological Society. Data elaboration and final map preparations were implemented in GIS environment, while model building was based on popular statistical approaches, including Discriminant Analysis, GLM and Maxent. The results presented here will set the basis for the next step in our research, involving the creation of habitat suitability maps at a larger scale, encompassing the whole region of the Aegean Sea.

Keywords: *Falco eleonora*, nest-site selection, habitat suitability modelling, Aegean Sea

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The dynamic of waterfowl populations (Anatidae) from Special Protected Area – Danubes' Borcea Branch - along the Fetesti-Giurgeni sector

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The study territory includes the “Bentu Mare, Bentu Mic and Bentu Mic Cotoi” SPA with a total surface of 11,500 ha, presenting a natural flooding regime of Borcea Danubes' Branch, without major negative impacts from human activities, preserving a numerous suitable habitats for birds - crops (27% of the areas' surface), forests (21% of the areas' surface) and transition areas: bushes, marshes, water courses, channels, lakes. Our fieldwork began in 1992, in six observation points, but important effectives of waterfowls were observed in this area since 1998. We identified 18 species of birds: 4 geese species, 11 ducks species, 2 swans species and 1 smew species, using this territory for feeding, nesting, resting and refuge. The waterfowls' dynamics is assigned with the time of the year in which these species are present in the territory either for nesting, passage or wintering. The breeding populations are fewer than the passage and also than the wintering ones. During all the 11 years of monitoring the area we observed that the bird's effectives are increasing year by year (especially, the sedentary species) but their appearances are unequal. Also these species have precise routes between the feeding territories and the resting ones.

Keywords: waterfowls, monitoring, trends, risks

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The bird fauna's evolution in the Lower Siret River (Galati, Romania)

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In the Lower Siret River's area the ornithological studies are just few and not actually. We follow the bird fauna's evolution starting from earlier '90 till now, comparing our monitoring studies began in 2004 with the only one published data (1994) regarding this territory, with a present status of SPA (Romanian Nature 2000 Network). There are some ponds and natural swampy areas (Talabasca, Lozova, Potcoava), while other were disappeared. If in 1994, there were recorded 48 bird species during the autumn birds' migration time, the present bird fauna's list comprise 107, with important breeding species' diversity (63 species). We notice the presence of some rare and protected breeding species in Romania and nor only (*Casmerodius albus*, *Egretta garzetta*, *Platalea leucorodia*, *Aythya nyroca*, *Falco naumanni*, *Himantopus himantopus*, *Chlidonias leucopterus*, etc.), but also the appearance of some vagrant species (*Numenius tenuirostris* or *Glareola pratincola*), while some rare species in other sites from Romania use this area like feeding territory during the migration time (*Pelecanus onocrotalus*, *Tadorna tadorna*, *Recurvirostra avosetta*, etc.). We analyse the influence of the different human activities in the area on the birds' diversity and populations, too.

Keywords: bird fauna, evolution, trends, conservation

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Assessment of the Effect of Reed bed Reaping Model and Ratio on Natural Filtering Areas Considering the Bendimahi Delta Plain Case (Van-Turkey)

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Reed bed appear in shallow coastal areas where water and land converge and are considered as a transition and buffer zone between two different ecosystems. They not only host living organisms from both environments but also assist to form a balanced interaction between environments. An undisturbed reed bed serves like a technical water treatment system by allowing particle deposition and physical purification, by microbial decomposition of organic matter and by chemical purification through uptake by living organisms. The Bendimahi Stream begins from the peaks of the mountains and the sparkling water flows into the Lake Van. A delta plain occurred at the point where the stream reaches the lake. However, a great amount of soil mixes in the stream water during flowing especially in rainy seasons as a result of erosion. In addition, the waste of close settlements and agricultural remedies contaminate the stream water. Furthermore, the stream bed was also shifted at some locations due to river-bed sand quarry excavations. Improper drainage and reed bed reaping allow rapid water flow resulting in a deepened stream bed. The contaminated water in the Bendimahi Stream flowing through undisturbed reed bed joins the system after gradual decontamination, but the stream flows into the lake without any purification at the locations where the reed bed were already destroyed. For this reason, it is concluded that the proposed concept of reaping reed bed to a certain extent is not valid for such type of areas. Instead, it will be more efficient to evaluate each wetland separately and to plan sufficient amount of reed bed reaping from appropriate locations. A large enough reed bed filter in front of running contaminated water will significantly contribute to keep the Lake Van water clean which also exhibits various signs of contamination.

Keywords: Bendimahi Delta Plain, Lake Van, reedbed, reedbed reaping, contamination filtering

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**Bird monitoring in the area of oil and gas development in vicinity of
Chaivo Bay (north-eastern Sakhalin, Russia)**

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Chaivo Bay is recognized as an Important Bird Area crucial for reproduction of several protected bird species. Therefore bird conservation in this area is essential in the context of the rapid development of oil and gas projects on Sakhalin. Long-term monitoring of avifauna was started by Sakhalin Energy Investment Company Ltd. in order to assess the relevant risks and mitigation of impacts during pipeline construction. During the pre-construction stage nests of dunlin (*Calidris alpina actites*) and Kamchatka tern (*Sterna camtschatica*) were identified, and the pipeline was re-routed to avoid impact on colonies of these bird. Furthermore, construction works were postponed during the nesting periods of 2006-2008. Studies of bird species and abundance, search and mapping of nesting areas, and studies of behaviour and nesting biology of dunlins and terns were also carried out in the vicinity of Chaivo Bay. Banding was used to study the characteristics of population biology and seasonal migration of species. The numbers of dunlin was stable during 2004-2009, with up to 100 pairs for the nesting season. The total number of Kamchatka tern nests varied from 30 to 100. Nests of Steller's sea-eagle (IUCN Red List) and other bird species protected at regional level were also recorded at Chaivo Bay.

Keywords: monitoring, *Calidris alpina actites*, *Sterna camtschatica*, Sakhalin

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Illustrations of Griffon Vulture (*Gyps fulvus*)

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Illustration is describing or interpreting as visual oral elements such as title, slogan or text. Scientific illustrations are preparing with instructive and complementary purposes for specific fields such as botany, medicine, zoology, mechanical, geology. Drawing of *Gyps fulvus* (Griffon Vulture) Isparta-Sütçüler, with Charcoal drawing, Guaj Paint Technique: Watercolor technique and Rapido technique, were illustrated by Yasemin Öztürk. They are drawn from seeing behavior of individuals in the area. In bone and feather drawings, it was benefited from Microscope. Morphologic and anatomic illustrations were general morphologic appearance, bone structure of the head, joints in the foot, scale and skin, bill structure, wings, underside and upperside of wings, the neck feathers of juvenile and adults and microscopic images. Illustrations of the behavior of individuals were roosting and flying (gliding, rising, landing) and comfort behaviors.

Keywords: biological illustration, *Gyps fulvus*, vulture

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Breeding ecology of Great Bittern *Botaurus stellaris* in eastern Poland

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The breeding ecology of the Great Bittern *Botaurus stellaris* was studied on fishponds in eastern Poland from 2003 to 2009. The study areas were surveyed from March to the early July. We regularly visited 143 active nests. The majority of females started laying in the end of April and in the beginning of May. The mean clutch size in studied population was $4,8 \pm 0,8$ (N=109). No significant differences in clutch sizes during the seven seasons were found. In the studied population the clutch size was stable as the season progressed. Hatching success was high 92%. For all years of the study the breeding success was 51% (N=120). The mean number of nestlings per a breeding female was $2,6 \pm 2,0$ (N=132) and the mean number of nestlings per a successful female was $3,8 \pm 1,3$ (N=92). The main mortality factor for eggs and nestlings was predation by mammal predators. The high breeding parameters obtained from this population were probably due to extensive fish management and the good and stable food resources in the studied fishponds.

Keywords: Great Bittern, *Botaurus stellaris*, breeding biology, fishponds

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Structure of Rook (*Corvus frugilegus*) colonies and nesting of other bird species in steppe forest belts

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The Rook (*Corvus frugilegus*) entered steppe ecosystems of the South of European Russia together with planting forest belts, when a substratum for the construction of nests appeared. The species formed large colonial settlements in the area, which both changed the landscape and attracted other bird species to these new biotopes for nesting. In the present study, authors analyzed specific features of nesting of Common Kestrel (*Falco tinnunculus*), Red-footed Falcon (*F. vespertinus*), Mallards (*Anas platyrhynchos*) and Tree Sparrow (*Passer montanus*) in the colonies of Rook. Some specific features of colonial nesting of Rook (perennial nests, presence of reserved nests (from 14% up to 84%), early nesting) form the conditions attracting other bird species for joint nesting. The structure of colonies in forest belts of different age was also studied. The quantity of reserved nests increased in old colonies, as well as the number of other nesting species. The weight of eggs, clutched by rooks at the end of breeding season, varied depending on the age of colony; with higher values in the old colonies. The inverse tendency was registered for Red-footed Falcon. The eggs of Common Kestrel in clutches outside colonies were larger. Present study shows that there are complex topical relations between bird species in multi-species colonies. Moreover, these relations affect reproductive characteristics.

Keywords: Colony structure, Rook, Common Kestrel, Red-footed Falcon, Mallards

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Lead concentrations and lead poisoning in waterfowl in the Evros Delta (Greece)

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Lead poisoning as a result of ingestion of spent gun shot is a widespread problem among waterfowl. Whereas lead shot has been replaced by non-toxic shot in many countries, it is still widely used and continues to be used in Greece. Here we present the first assessment of lead (Pb) concentrations in waterfowl (Anseriformes) tissues in Greece. Liver and brain samples derived from 64 individual swans, geese and ducks, originating from the Evros Delta in northeastern Greece, were analysed. Swans were found dead whereas geese and ducks had been shot. Levels of lead were screened for possible contamination due to the presence of lead shot in the tissue. Fourteen birds (23%) had levels of lead in the liver indicative of poisoning (> 5 mg/kg dry weight). Poisoned individuals belong to seven species (*Anas acuta*, *Anas crecca*, *Anas clypeata*, *Anas penelope*, *Anas strepera*, *Cygnus cygnus* and *Cygnus olor*). The percentage of birds with lead concentration above the critical level varied from 12.5 to 25% for the four *Anas* species for which a large enough sample size was available. All swans (*Cygnus* spp.) had levels indicative of lead poisoning whereas no sample from *Anser albifrons* or *Anas platyrhynchos* had lead concentrations above the critical level. Although sample sizes are small, it is quite evident that the problem of lead poisoning appears to be widespread and in agreement with the findings of studies on the incidence of gun shot in the gizzard.

Keywords: Lead poisoning, waterfowl, Evros Delta, Greece

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The breeding ecology of the Yellow-vented Bulbul *Pycnonotus xanthopygos* in an urban area of Antalya

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The goal of this study was to determine breeding ecology of the Yellow-vented Bulbul (*Pycnonotus xanthopygos*) and was determined that the breeding activities occurred between March to September with one clutch per pair and/or breeding season. Nests were observed on 16 different tree species and clearly preferred the palm and stone pine trees (48%). The species laid 2 to 4 eggs and the mean clutch size was 3.4 ± 0.07 eggs per nest. A total of 208 eggs were laid on the 73 nests observed by studied pairs. The mean length (mm), breadth (mm), weight (gr) and volume (mm^3) of eggs were 24.04 ± 0.09 , 15.87 ± 0.05 , 3.47 ± 0.02 and 30.3 ± 0.47 , respectively. The mean weight of 5, 10 and 14-day old fledglings were 11.78 ± 0.38 , 21.72 ± 0.15 and 25.29 ± 0.28 , and the mean length of incubation and chick rearing periods were 10.94 ± 0.19 and 13.04 ± 0.17 days, sequentially. Hatching success was found 80.29% and fledgling success, compared to total laid and hatched eggs, was 69.23% and 86.22% in sequence.

Keywords: Yellow-vented bulbul, *Pycnonotus xanthopygos*, breeding success, Antalya

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Breeding habitat and nest-site selection in birds of prey (Accipitriformes) and Black Stork (*Ciconia nigra*) in the Mediterranean pine woodland of Lesvos

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The *Pinus brutia* woodlands of Lesvos have a quite rich avifauna, including a number of species of bird of prey and *Ciconia nigra*. We compare parameters of habitat quality in plots within known breeding territories of *Circaetus gallicus*, *Accipiter gentilis* and *Ciconia nigra* with randomly selected plots in other parts of the woodland to assess selection of breeding territory and we compare characteristics of the nesting tree with those of other trees within the breeding territory to assess selection of a tree on which to build a nest. Parameters measured were height, diameter at breast height (DBH), dominance within the stand, total number of cones, number of closed cones and average cone size of ten randomly selected trees and the ten tallest trees, as well as stand age, in each plot. *Accipiter gentilis* and *Ciconia nigra* showed very similar preferences as to habitat and nest site. They both nested in stands with taller than average trees and with a greater trunk diameter than in random plots and chose one of the tallest trees and the tree with the greatest trunk diameter in the stand. *Circaetus gallicus* on the other hand nested in stands which did not differ significantly from random stands and nested on a tree that was randomly selected as to height but had a relatively large trunk diameter. The importance for conservation of maintaining stands of tall, large, old trees is discussed.

Keywords: Habitat selection, breeding, birds of prey, *Ciconia nigra*, Mediterranean

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Diet of the Kestrel (*Falco tinnunculus*) in urban and non-urban habitats in northern Greece

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The diet of the Kestrel (*Falco tinnunculus*) was studied by pellet analysis in northern Greece, in both urban and non-urban areas. A total of 875 pellets were collected on a seasonal basis, throughout the year, during the period 2000-2009. At least 565 pellets were collected in Thessaloniki and 310 in five agricultural lowland areas. In total, 1930 prey items were identified in the city and 1049 in the non-urban areas. Reptiles (mainly *Laudakia stellio* and *Lacerta* spp.) and birds (mainly *Passer* spp.) were relatively more common in the urban areas while mammals (mainly *Microtus rossiaemeridionalis*) were more common in the non-urban areas ($\chi^2 = 419.03$, $p < 0.0001$). In the urban area, mammals were relatively more common in spring and birds more common in summer, while both these taxa were relatively more common in the breeding season compared to the non-breeding season. Insects (mainly Orthoptera, Hymenoptera and Coleoptera) were common prey in both habitats, while other arthropods were found mostly in the non-urban areas. Differences detected between urban and non-urban areas were attributed mostly on the prey availability.

Keywords: Diet, *Falco tinnunculus*, urban, non-urban, Greece

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Determination of Avian Influenza A viruses in some avian species in Van Lake Basin by RT-PCR, their isolation and sub-typing (4th Presenting of Data)*

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In this study, fresh feces samples collected during 37 months, from February 2006 to March 2009, from 2013 animals consisting of 47 avian species covering random, transitory, winter visitor, migratory and native birds in the Van Lake Basin were tested by real-time PCR with respect to avian influenza (AI) type A virus M2 gene. Of them, 59 samples (2.9%) were found to be positive. RT-PCR positive samples were examined with the same method with respect to H5N1 and 4 samples (6.8%) were found to be positive. RT-PCR positive 59 samples were inoculated in embryonated chicken egg (ECE) and AI type A virus were isolated from 12 samples (20.3%). Of the isolates, 3 were typed as H1N7, 2 as H7N9, 2 as H11N9 and 1 as H8N4 with hemagglutination inhibition (HI) and neuraminidase inhibition (NI) tests. Four isolates typed as H5N1 in RT-PCR gave positive reaction in HI both with H1 and H5 antisera and all of them were typed as N1. These four isolates were determined in fecal samples collected in 2006 from winter visitor *Anas clypeata* duck species. Feces samples found to be positive with RT-PCR belonged to avian species Anseriformes, Charadriiformes, Passeriformes, Gruiformes and Phoenicopteriformes families. The highest positivity was determined in winter visitor *Anas acuta* (37.1%) and *Anas penelope* (22.5%) ducks. Of the RT-PCR positive 59 samples, 43 (72.9%) were determined in the samples collected during winter and spring of 2006, 2007, 2008 and 2009. With this study, the presence of AI type A viruses in various wild birds in the Van Lake Basin were determined for the first time in Turkey.

Keywords: Avian influenza, wild birds, RT-PCR, isolation, typing

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Migrations of partial migrants - Great and Blue Tits (*Parus major* and *P. caeruleus*) in Ukraine

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Study of bird migrations we carried out in different regions of Ukraine since 1974. The greatest quantity of the information was receive in the Northern Ukraine - at Station "Lebedivka", where birds were trapped with the help by Rybachiy trap. 71,195 Great (*Parus major*) and 35,487 Blue Tits (*P. caeruleus*) were ringed. One hundred and seventy (170) distant recoveries are received from ringed great tits (0.239 %) and only 6 - from blue tits (0.017 %). The significant correlation ($r = 0.8254$) between the intensity of migration of Great Tit and Blue Tit at "Lebedivka" (1976-2001) was found (correlation Blue Tit/Chaffinch makes 0.3474). The intensive migrations of Great Tits are characteristic for wood and wood-steppe zones of Ukraine. The truth, the tendency to reduction of this parameter from north to the south is marked - already in northern part of the steppe zone intensity of migration in some times lower than in north. In southern areas of the steppe zone (Azov-Black Sea region) migrations of Great Tits are not marked. At the same time intensive migrations of Blue Tits were observed in all territory of Ukraine. The ratios of captured Great and Blue Tits change from 2:1 in the north to 1:9.5 in the south of Ukraine.

Keywords: Great Tit, Blue Tit, partial migrant, Ukraine

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**Morphometric peculiarities and allozyme variations of Bearded Tit
Panurus biarmicus (Aves: Passeriformes) distributed in two wetlands in
Central Anatolia**

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The Bearded Tit *Panurus biarmicus* is a small passerine bird which is confined to wetland habitat, is also distributed in Turkey. Up to now three subspecies were recorded in Turkey; one of these *Panurus biarmicus kosswigi* endemic one was recorded only from Amik Lake in Turkey and is now extinct due to drying up of the lake. Likewise other sub-populations are under the same threat. In this connection determine of morphological peculiarities and genetic variations of these local sub-populations are important to be investigated. Twelve external morphological characteristics were measured. Wing length was found in the range of 75 - 87 mm, tarsus length 18 - 22.25 mm and wing span 177 - 196 mm respectively. Genetic variation was assessed using nineteen isoenzyme systems. Eight of 19 loci (Pgm, Me-I, Me-II, Fum, Est, Mpi, Pgd and Acon-M) were found to be polymorphic. Observed heterozygosity and the percentage of polymorphic loci was higher in Eber Lake (Afyon) ($H_o = 0.135$, $P95\% = 42.1\%$) than Behiçbey Reedbed (Ankara) ($H_o = 0.128$, $P95\% = 31.6\%$). The mean value F_{ST} is 0.17 and N_m is 1.2 and these values show that the genetic variation is moderate/high, but gene flow is not high between the sub-populations.

Keywords: *Panurus biarmicus*, Bearded tit, morphology, allozyme, genetic

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Breeding success of the Montagu's Harrier *Circus pygargus* in the context of food changes and predator impact - three decades of observations

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The breeding population of the Montagu's harrier was studied in Poland from eighties of the 20th century to the first decade of the 21st century. The study area was the calcareous marshes near Chełm in eastern part of Poland. The dominant plant community in the breeding area was the sedge *Cladietum marisci*. During three decades 212 nests were monitored. Data from the eighties were presented by Krogulec (1992). Since the eighties to the first decade of the 21st century, the number of laying eggs decreased from 4.15 to 3.90 per pair in the study population. The number of nestlings decreased too, from 2.98 in eighties to 1.79 in the first decade of the 21st century. Similarly the average number of fledglings decreased from 1.71 to 0.54 in breeding years between 2004 and 2009. The main predators in the period of incubation were corvids in all study years. The Red fox was the main predator in the nesting period in the eighties and nineties. But in seasons 2007-09, the Marsh Harrier was the most important predator of Montagu's harrier broods. The diet of the Montagu's harrier changed too. The number of mammals in the food decreased from 64% in the eighties to 30% in the first years of the 21st century. The role of birds, reptiles and insects as supplementary food increased. The changes in the food resources in hunting territories of Montagu's harrier, together with increasing of predator pressure on the harrier broods can affect its breeding success.

Keywords: *Circus pygargus*, breeding success, food, predator impact, Poland

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Geolocation of small migrants by light: benefits and constraints of a promising method

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Current technical development allows to equip small songbirds with global location sensing tags (GLS). The principle underlying geolocation by light has been known for a long time. Sailors in medieval times determined the positions of their ships using sunrise and sunset. Similarly, a modern geolocator measures time and intensity of sunlight and saves the data for periods longer than one year. The travels and whereabouts of migrant birds can thus be reconstructed once the data have been downloaded from the device. Here, we concisely describe the underlying principle allowing for a better understanding of the method. Moreover, we indicate three major constraints: temporal limits for accurate measurements depending on latitude, temporal limits depending on equinox times, and local limits depending on topography (orography). Finally, we discuss some prerequisites which should be considered when planning tracking studies of terrestrial birds with GLS.

Keywords: migration, tracking, body mass, passerine, day length

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The rook *Corvus frugilegus* as a potential vector of antibiotic resistant bacteria

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The potential for transport and dissemination of human pathogenic bacteria by the rook *Corvus frugilegus* is of concern. Faeces collected during the wintering and nesting period were investigated toward the presence of bacteria related to human enteric diseases. Besides of bacteria representing the genera of Enterobacteriaceae (*Escherichia*, *Enterobacter*, *Yersinia*, *Citrobacter*, *Hafnia*) the most numerous isolates belonged to *Campylobacter* and *Enterococcus*. Over the last years the increase in the incidence of human infection and colonization with glycopeptide-resistant enterococci (GRE) was observed. A research on the susceptibility of isolates of *Enterococcus* to vancomycin and teicoplanin was undertaken to assess potential of the rook as reservoir of GRE strains. The vancomycin resistant enterococci were recovered from approximately 5 percent of the total number of *Enterococcus* strains. The presence of the *van* resistance genes was assayed by PCR.

Keywords: rook, human pathogenic bacteria, antibiotic resistance, glycopeptide-resistant enterococci, vancomycin

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**Woodpecker distribution in the National Park of Northern Pindos:
historical and new data**

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A key element for ecological forest management is the maintenance of biodiversity in the presence of “industrial” use of forests. Loss of natural forest habitats can affect the composition and abundance of bird communities, particularly, of cavity-nesting birds, the presence of which depend largely on dead or dying trees (snags) suitable for cavity excavation. Woodpeckers are highly dependent on snags for nesting, roosting and feeding. Aim of the present study is to compile historical and new data collected through the development of a monitoring program in order to determine the status and develop distribution maps of woodpecker species in the National Park of Northern Pindos. Based on bibliography, eight species of woodpeckers have been recorded in the area of Northern Pindos Mountain Range. These are *Dryocopus martius*, *Dendrocopos major*, *Dendrocopos medius*, *Picus canus*, *Picus viridis*, *Dendrocopos leucotos*, *Dendrocopos minor* and the wryneck (*Junx torquilla*). However, no older or recent evidence confirm occurrence of all these species in the area. The survey was conducted in the National Park of Northern Pindos during the spring and summer of 2008 and data on the presence of all species of woodpeckers observed in the area were collected. Five species breed in the study area: *Dryocopus martius*, *Dendrocopos major*, *Dendrocopos minor*, *Dendrocopos medius* and *Picus viridis*. For *Picus canus* and *Dendrocopos leucotos* there is only once evidence for their presence over the last 10 years, while the wryneck has been recorded in the past without recent observations. Woodpeckers are considered as “keystone species” in forest biodiversity, providing nesting and roosting holes for other wildlife species. A reduction in large snags, important components in temperate and boreal forest ecosystems, and tree size in forest stands could reduce populations of woodpeckers, as these species are highly dependent upon snags.

Keywords: Woodpecker distribution, National Park of Northern Pindos, monitoring, Greece

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Is natural selection responsible for beak size differences among the three subspecies of chaffinch in Eastern Europe?

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The discontinuous variation in beak size in *Geospiza* and *Nesospiza* finches, *Pyrenestes ostrinus*, and *Emberiza schoeniclus* is the result of disruptive selection driven by adaptation to food sources with different dimensions. In Eastern Europe, the three parapatric subspecies of chaffinch (*Fringilla coelebs*) differ in their beak sizes. *F. c. coelebs*, which inhabits most of Europe, has the smallest beak. *F. c. solomkoi*, which inhabits the Crimean Peninsula and northeastern coast of the Black Sea, has the largest beak. The Caucasian subspecies *F. c. caucasica* has an intermediate beak. To test whether these differences resulted from disruptive selection, we measured beak length, width and depth, and body weight for 102 *F. c. coelebs* from 8 localities along a latitudinal transect from 35°N to 66°N, 25 *F. c. caucasica* and 17 *F. c. solomkoi*. We found no differences in weight among the subspecies or localities. In *F. c. coelebs*, all beak measurements were inversely related to latitude. Beak length for *F. c. caucasica* and *F. c. solomkoi* fit well into the regression whereas their beak width and depth were much larger than predicted, so their addition eliminated the clinal relationship with latitude. Thus, in the chaffinch the variation of beak width and depth, but not length, is discontinuous and may have resulted from disruptive selection.

Keywords: disruptive selection, beak size, chaffinch, *Fringilla coelebs*, latitudinal cline

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Sex and age related differences in timing and body condition of migrating Reed Warblers *Acrocephalus scirpaceus* and Sedge Warblers *Acrocephalus schoenobaenus*

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Different timing of passage of particular bird species at the staging areas along their migration routes (adults earlier than juveniles and/or one sex before the other) is described as differential migration. In studies of sex differential migration, little attention has been drawn to autumn migration. We studied autumn timing of migration and body condition of molecularly sexed Reed Warblers *Acrocephalus scirpaceus* and Sedge Warblers *A. schoenobaenus* (211 and 208 ind. respectively) at a stopover site in northern Poland (Druzno Lake) in 2008. Immature males of the Reed Warbler were caught significantly later than females but in the Sedge Warbler both sexes of immatures migrated at a similar time. Adult males and females of both species did not differ in time of migration. Adults of both sexes of the Reed Warbler and Sedge Warbler were generally caught earlier than immatures. The body mass of adult and immature males was higher than females in both species. In both species body condition indices and fat reserves of immatures were generally lower than in adults. The results indicate that autumn migration might also be a subject of trade-offs and that even in closely related species the pattern of migration might be different.

Keywords: differential migration, Reed Warbler, Sedge Warbler, sex differences

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Timing and migration of wheatear species (*Oenanthe* spp.) on spring 2009 at Boğazkent, Antalya, Turkey.

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Migratory birds accomplish their migration with a series of shorter or longer flight steps and spend most of their time for resting and refuelling at stopover sites. Many bird species have a restricted choice for suitable stopover habitats, which are scarce or distributed patchily. With this study we aimed to investigate stopover ecology of wheatear species (*Oenanthe* spp.) and timing of spring migration at Boğazkent (36°50' N, 31°08' E), nearly 40 km to the east of Antalya, in south Turkey. This is an area between the Mediterranean Sea and the Taurus mountain chain which is of great importance for migrants and it is part of the Belek Special Protection Area. Boğazkent has a variety of terrestrial and wetland habitats close to each other, so it is suitable for many different migrant bird species and provides quite important food in migration periods. During the field experiment, which lasted from 1 March to 31 May 2009 and from 20 August to 18 October 2009, 124 birds (34.07%) from 364 observed wheatears were captured with spring traps baited with mealworms (*Tenebrio molitor*). Birds were ringed with individual combinations of metal and color rings. The study included 3 wheatear species (Northern Wheatear- *O. oenanthe* 64 birds 33.68% from 190, Isabelline Wheatear- *O. isabellina* 37 birds 35.92% from 103 and Black eared Wheatear- *O. melanoleuca* 16 birds 25.40% from 63). Additionally we caught Desert Wheatear- *O. deserti* (6 birds 85.71% from 7) and Finch's Wheatear- *O. finschii* (1 birds 100%) - a first record of the species for Boğazkent. Spring migration differed by species; As the first Isabelline Wheatear was observed 7th March and last one was 7th April, Northern Wheatear started later 9th March and Black eared Wheatear much later (21st March). Following studies will give departure decision and stopover ecology of wheatear species.

Keywords: Wheatear, timing, stopover, migration, Boğazkent

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Waterfowl in the wetlands in the north-west coast of the Black Sea (Odessa region) and their management

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We describe the status of waterfowl in the wetlands of the north-west coast of the Black Sea. The Mute Swan (*Cygnus olor*) has increased in recent years, due to mild winters, but all the other species have declined significantly in the last decades due to a combination of hydrological changes (since the construction of a dam in the river Dnestr in 1983), excessive and uncontrolled hunting, as well as the increase of the Raccoon Dog (*Nyctereutes procyonoides*). Among these species is the globally threatened Ferruginous Duck (*Aythya nyroca*). The studied area is also important for migration. Management proposals include the delay of the opening of the hunting season, establishment of reserves, management of the hydrological regime and predator control.

Keywords: waterfowl, *Cygnus olor*, *Aythya nyroca*, conservation, Black Sea

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Bird migration research in the Kızılırmak Delta, Samsun since 2002: an analysis of bird ringing

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The Cernek Ringing Station was launched for the purpose of studying bird migration in northern Turkey, a poorly investigated region in this respect. Cernek Ringing Station is located in the Kızılırmak delta, Wildlife Protected Area, on the Black Sea coast, near Samsun. Ringing studies at Cernek Ringing Station started in spring 2002. The station was active at each migration period in spring (15 March - 30 May) and in autumn (15 August - 30 October) seasons in 2002 - 2009. So far 51909 birds from 128 species were ringed. Birds were mist-netted and handled according to the SEEN (SE European Bird Migration Network) standards. A higher density of passage was observed in autumn compared to spring. The species composition also differed between the two seasons. Among the caught species the first record of *Phylloscopus borealis* and *Tringa flavipes*, the fifth record of *Acrocephalus dumetorum*, the sixth record of *Phylloscopus inornatus* in Turkey was noted. Three birds with a foreign ring and 13 ringing recoveries were obtained during eight years of ringing. Some not well known occurrence of birds and their density in the study site is also detected through ringing studies. The high number of captured birds indicates that the Kızılırmak delta is an important stopover for migratory passerines.

Keywords: bird ringing, bird migration, Cernek Ringing Station, Kızılırmak delta

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Biometrics of the Blackcap (*Sylvia atricapilla*) caught during autumn migration through the Kizilirmak Delta

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The biometry of the Blackcap (*Sylvia atricapilla*) has been well studied in several European countries. However, only a few studies have been carried out in Turkey with few samples in relatively small areas. For this study we analyzed data from Cernek Ringing Station which is located on the northern coast of the Blacksea. Ringing data is based on continuous and standardized mist-netting at Cernek Ringing Station between 2002 – 2008 in autumn seasons. Although in some years ringing periods began or lasted on the same days, we restricted the analysis to the period from 18 August to 25 October to make results comparable between years. To compare the migration dynamics, ringing season was divided into five periods of 15 days. 5475 Blackcap were caught; dynamics and biometrics were evaluated for different sexes and migration periods. With other birds, biometric studies can be useful to better understand the morphology, migration features and biology of the Blackcap and improve conservation efforts. Inter-and intra-seasonal changes of biometry can be a function of temporal and spatial distribution of different populations.

Keywords: *Sylvia atricapilla*, Blackcap, Kizilirmak delta, biometry, morphology

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European Seabirds at Sea (ESAS) recordings in Greece

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In 2009, the Hellenic Ornithological Society (HOS) launched the «Concrete Conservation Actions for the Mediterranean Shag and Audouin's Gull in Greece, including the Inventory of Marine IBA's» a LIFE Nature project (LIFE 07 NAT/GR/000285). One of its main actions is to record seabirds within their marine environments using the European Seabirds at Sea (ESAS) methodology. This methodology is based on recording seabirds in the marine environment from boat or research vessel, with a steady course and speed of up to 20 knots. The main objective of the ESAS methodology is to record the distribution of seabirds within their marine environment with emphasis on their behavior. Apart from recording the presence, number and behaviour of birds, other parameters are also recorded such as the rest of marine fauna (e.g. cetaceans, fishes), human activities (e.g. fishing) that take place in the given marine regions as well as the floating materials. In these ESAS surveys, the Hellenic Society for the Study and Protection of the Monk Seal (Mom) also participates with their own vessel, mainly covering the marine regions of the northern Aegean Sea while more than 15 HOS volunteers who have been recruited and trained by HOS staff play an important role in ESAS surveys.

Keywords: European Sea Birds at Sea, Greece

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Variations in nest-site parameters in waterbirds at Lake Zarivar, Western Iran

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Variations in nest-site parameters were studied in six waterbird species at Lake Zarivar, Kurdistan Province, western Iran in 2007 and 2008. Nest-site selection was determined by vegetation density and height, water depth, distance to the open water, as well as distance to nearest nest of the same species. The target species of the study were Great-crested Grebe *Podiceps cristatus*, Little Grebe *Tachybaptus ruficollis*, Moorhen *Gallinula chloropus*, Coot *Fulica atra*, Water Rail *Rallus aquaticus* and Whiskered Tern *Chlidonias hybrida*. Great-crested Grebe selected areas of greater water depth, maybe to increase feeding efficiency. All species were directly dependent on water for nesting except for Water Rail which establishes the nest in muddy areas with higher vegetation density and height. Nests were more concentrated in the Whiskered Tern than in other species. Overall, mean water depth at nesting sites was lower in the 2008 breeding season and the total breeding population of waterbirds decreased. Evaluating and monitoring of quality of habitat of breeding species, urges conservation measures with regard to transformations occurring at this freshwater lake ecosystem.

Keywords: nest-site parameters, waterbirds, Lake Zarivar, Kurdistan, Iran

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**Habitat use by waterbirds in three wetlands on the island of Corfu,
northwestern Greece**

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Abundance, habitat use and number changes of waterbirds was studied in three coastal wetlands on the island of Corfu, northwestern Greece, during migration, wintering and breeding periods 2008 – 2009. We carried out systematic bird surveys (at 10-day time intervals) from August 2008 to July 2009 at Chalikiopoulos Lagoon, Korission Lagoon and Lefkimmi Saltpans in Corfu island (36 surveys). We recorded 70 species and 38644 individuals on the whole. Chalikiopoulos and Korission Lagoons were the most important wintering sites for waterbirds, supporting 28 species with 500 max population and 30 species with 1520 max population respectively. Korission Lagoon supported the greatest wintering population of Pintail, whereas Chalikiopoulos Lagoon the greatest population of Grey Heron. On the contrary, Lefkimmi Saltpans was the most important site for migrating and breeding birds, attracting many species (37 during spring migration and 22 during summer), such as Black-winged Stilt, Curlew Sandpiper and Little Stint. The wetlands of Corfu seems to be important areas for wintering waterfowl and migrating waders according to their size, due to their position on the migrating route along the seacoast of western Greece. Conservation measures are considered essential in order to safeguard their value for the migrating birds.

Keywords: waterbirds, abundance, habitat use, Greece

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**First data on seabird by-catch from the Greek gillnet and long-line fishery
(Ionian Sea, western Greece)**

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Incidental mortality of seabirds in commercial fisheries around the world constitutes an immediate and pervasive ecological threat and is causing declines in many breeding populations. A worldwide review of the incidental catch of seabirds by commercial fisheries showed a lack of adequate quantitative data on seabird mortality in the Mediterranean basin and, more specifically, in Greece. An assessment of the by-catch problem was undertaken from May to August 2009 in major fishing areas in the Ionian Sea, within the framework of LIFE-Nature project «Concrete Conservation Actions for the Mediterranean Shag and Audouin's Gull in Greece, including the Inventory of Marine IBA's», LIFE07NAT/GR/000285. The research team assessed possible effects of two different fishing gears (gillnet and demersal longline) on seabird mortality. The first on-board observations, checking a total length of 110 km of gillnets and 10 longline sets (2,000 hooks) and covering a total marine area of 2,500 km², showed no incidents of accidentally trapped seabirds and a bait (mostly sardines) estimate loss up to 5-10%. Bait loss was mainly due to Cory's shearwaters and not to other seabird species. Setting gears took place in different hours during the day, looking for possible differences on by-catch risk. Future research will focus on the assessment of seabird by-catch mortality for the next two years by using on-board observations for a wider period of time (March to October) combined with distributing questionnaires to local fishermen in order to assess the threat of by-catch in the Ionian Sea.

Keywords: by-catch, Mediterranean, longline, gillnets, shearwater

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**Preliminary data on coastal counts for seabirds on the island of Lesbos
(Aegean Sea, NE Greece)**

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Coastal counts is a widely used method of collecting population data of seabirds and their behaviour in order to determine patterns of daily and seasonal behaviour as well as identify potential marine IBA sites. Within the LIFE07NAT/GR/000285 framework a fieldwork based on the above methodology took place on the island of Lesbos, at the beach of Chichliontas, which is located at the southwest part of the island. In total, six observations were undertaken from July to August 2009 and during this period four seabird species (Mediterranean Shags, Cory's Shearwaters, Yelkouan Shearwaters and Yellow-legged Gulls) were recorded. A standardized observation protocol was implemented including predefined period and timing of observations. During six observation days, including morning and afternoon sessions, a total of 13,178 seabirds were counted, out of which the Cory's and Yelkouan Shearwaters were the most abundant. The number and direction of seabirds passing through the observation area varied with the time of the day and was reduced from the beginning of July until the beginning of August, where the lowest rates (up to a 90% decrease of the total number of seabirds) were shown. Furthermore, the majority of the birds appeared to follow N-NE direction. The results suggest that SE Lesbos is an important shearwater passage on their way to their foraging and wintering areas in the Northern Aegean and Black Sea.

Keywords: seabirds, coastal counts, marine IBAs, Lesbos

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Wintering ecology of Eurasian Robin (*Erithacus rubecula*) at Akdeniz University campus, Antalya: a preliminary study

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One of the important questions about bird migration is the over-wintering ecology of migrants at their wintering sites. Migratory birds differ from residents in one important respect: their population sizes may be influenced by conditions in more than one part of the world. For many species breeding and wintering areas are widely separated geographically, and may differ greatly in the numbers of birds they can support. However, most of the Palearctic migratory bird species remain to be studied at their wintering areas, including Turkey, which is of great importance for bird migration and wintering. With this study we aimed to examine the phenology and duration of wintering passerines, and also the variation and differentiation of the populations at their wintering area. In this paper, we gave the first year results of the study, in which Eurasian Robin data come into prominence. This study started in November 2009. It was carried out at Akdeniz University Campus, Antalya between the beginning of November and the middle of March, 2008-2009. We used 108 m mist nets to catch birds. According to the 2008-2009 data, mostly Eurasian Robin were caught and recapture rate is very high. Therefore we followed this study in the same area in 2009-2010 season because we want to learn more about to Eurasian Robin and this is being planned for the following years. Last year, we caught 25 Eurasian Robins and recaptured 12 of them. On the other hand, we caught 12 individuals first and have 4 recovery data from last year caught birds and recaptured 20 times from in this year. This preliminary data occur that same breeding population also come to use the same wintering area. Following studies will inform about wintering grounds and their ecology. Moreover, different questions may be answered about evolutionary aspect of middle and short distance migration and migration ecology.

Keywords: Eurasian Robin, *Erithacus rubecula*, Wintering ecology, migration, Akdeniz University campus

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Boğazkent/ Antalya, a new bird ringing station in Turkey

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Boğazkent was determined as an important bird area after the result of the “Boğazkent Bird Paradise Project” between 2000- 2002, with 213 bird species recorded there. On the other hand, a conclusion of the 2nd International Eurasian Ornithology Congress and the meeting about Boğazkent was “To be establish Boğazkent Bird Ringing Center”. After the development of this conclusion, “Boğazkent Bird Ringing Project” was taken Special Environment Protection Corporation’s (SEPC) 5-year investment plan. Boğazkent (36°50' N, 31°08' E) is located nearly 40 km east part of Antalya and which is the part of Belek Special Protection Area. Boğazkent has different ecosystem characteristics such as forest lands, scrubs and brush woods, reeds, lake, drainages, marshes, meadows, grasslands and dunes. This terrestrial and wetland characteristics close to each other in short distances, so it helped to consist different habitat types for different species and especially serve quite important food in migration periods. Ringing started in the 2009 autumn migration period (19 August - 01 October 2009). In this study, 8 nets parallel and 3 nets horizontal, a total of 11 nets (132 m long) were set in the reeds around Acısu Stream. We caught 671 birds from 37 species and most common caught species are Barn Swallow, Kingfisher, Yellow Wagtail, Sedge Warbler and Corn Bunting. Additionally, 31 birds from 10 species were recaptured during the study. The Mediterranean Sea is one of the important barriers for migrants during migration. We aimed to investigate bird migration and intra- and inter specific differentiation in long-term ringing studies.

Keywords: Ringing, Boğazkent, Mediterranean Sea, migration.

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Predator role of Blackbirds in biological control of *Neodiprion pini*

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Neodiprion pini is an important forest pest and defoliator of pine, especially young trees in Mediterranean regions. We study the nestling diets of blackbirds (*Turdus merula*) breeding in Eskişehir Meşelik Forest in Turkey during the breeding seasons of 2004-2009. This forest is the earliest re-afforested area of Turkey that has been re-afforesting since the 1940's. *Neodiprion sertifer* is a major pest on pines in this forest, where the larvae may cause growth reductions due to defoliation, showing typical outbreak dynamics, sometimes resulting in serious defoliation. The larvae sequester the resin from the needles in pouches in the foregut and use this as a defence against predators such as wasps, ants, spiders and birds. Thus, birds can't feed on larvae. On the other hand, we observed that blackbirds collect larvae that hide below forest ground and they feed the nestlings with these larvae on a high percentage (ranges % 30-70) at the 3rd instar phase. Also, we observed that blackbirds feed on pupae for themselves in the non-breeding season too.

Keywords: *Neodiprion sertifer*, *Turdus merula*, Blackbird, Türkiye, forest

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Spring orientation behaviour of migrants on the southernmost European islet of Gavdos: directional preferences and activity patterns

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Orientation behaviour of birds caught en route and tested in Emlen orientation funnels is believed to accurately reflect their directional preferences at that point of their migratory journey. We studied directional preferences and the effect of the time of the day on orientation performance of seven species caught during the spring migration on Gavdos, a small island south of Crete that funnels migrants breeding over a large portion of Eurasia. A novel technique based on lining Emlen funnels with ink-paper was used, and it provided a superb record of bird behaviour and allowed a very accurate quantitative analysis of the orientation trial. In most cases, birds exhibited a very narrow angular scatter in individual trials, and were appropriately seasonally oriented. The second-order analysis of individual means revealed an expected wider angular scatter of directions, indicative of a wide geographic origin of birds tested. Trials conducted at different times of the day demonstrated that nocturnal migrants remain active and correctly oriented throughout the day, suggesting that, contrary to the common practise, orientation trials need not be limited to the sunset period of the day.

Keywords: birds, orientation, spring, funnels, Gavdos

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Estimating wintering quarters of *Acrocephalus* species from autumn migration ringing data and NDVI indices

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The wintering quarters of several trans-Saharan migrant species are still partially- or unknown. The ecological conditions on the wintering quarters strongly influence the survival of long-distance migrant species. These conditions can be well approached using the Normalized Difference Vegetation Indices (NDVI) of the respective areas. Data of three common trans-Saharan migrant *Acrocephalus* species (Sedge Warbler - *A. schoenobaenus*, Marsh Warbler – *A. palustris* and Reed Warbler – *A. scirpaceus*) has been collected at Ócsa Reserve Area (Duna-Ipoly National Park, Hungary) with standardized conditions between 1984-2006. Survival rates have been estimated for each winter from the ratios of the total number of adult and juvenile birds ringed during the previous and the following autumn migration. Average vegetation indices have been calculated for the wintering seasons (December-January-February, NOAA AVHRR NDVI datasets, resolution: 8*8 km). From the survival and NDVI data Spearman's rank correlations have been calculated for each pixel, the R and p values have been illustrated on the map of Africa. Our results highly correspond to the known wintering areas of these species. These facts confirm that long-term autumn migration ringing data can be used for the conservative valuation of the wintering quarters of those species, whose wintering areas are partially known.

Keywords: NDVI, *Acrocephalus*, wintering quarter, Africa, Hungary

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Migration dynamics of Whitethroat (*Sylvia communis*) in the Kızılırmak Delta, Northern Turkey

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The ringing results of four years of study during spring and autumn migration periods in 2002 – 2005 are elaborated in order to identify the migration dynamics and biometrics of Whitethroat. Ringing studies were performed in Cernek Ringing Station in the Kızılırmak Delta. Birds are caught in mist-nets, SEEN (SE European Bird Migration Network) standards are used in the work (e.g. species identification, ageing, sexing, and measurements). 130 and 663 Whitethroats were ringed respectively in spring and autumn. The autumn migration (59 days) lasts longer than spring migration (36 days). The median date of first capture in spring is 26 April and in autumn is 16 August. The median date of last capture in spring is 25 May and in autumn is 5 October. In both seasons most of the migrating birds were immature (62% in spring, 85% in autumn). There is no significant difference in weight between the two seasons. There are significant differences in tail and wing length between two seasons. Bird ringing studies provide significant information about the bird species' migration biology. In long term studies, population fluctuations can also be analysed. In the presented study the comparison within both seasons were made and seasonal dynamics in a previously not studied area is presented.

Keywords: migration biology, *Sylvia communis*, Cernek Ringing Station, bird migration, Kızılırmak Delta

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Summer dynamic of the forest bird communities at the southern edge of the taiga zone.

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Seasonal dynamic is very important but poorly investigated feature of the bird communities. The summer dynamic is very changeable in the different habitats and depends on the vegetation structure and position of the habitat in the landscape. Study area is situated at the transitional belt between taiga zone and forest steppe at the western slope of the Western Khentey ridge (Mongolia). It has mountainous relief with altitudinal differences from 900 to 1600 m above sea level. The bird community of the primary dark-spruced forests at the high plateau has high stable between-year density and patterns of seasonal dynamic, due to synchronic between-year changes of density in the certain periods of year cycle. The most significant changes up to seasonal maximum came at first half of August at the peak of postnesting movings. The bird community of the larch-birch secondary forests at the northern mountain slopes has less stable between-year indices of density and seasonal dynamic. The between-year difference at the nesting period is quite large. The between-year difference of the post-nesting period is more significant: in one years it is intensive immigration and in other years it looks only like very weak tendency. The bird communities of the both mountain habitats have two indicator species - *Parus montanus* and *Sitta europaea*. Additionally 10 species are dominated at nesting period, changing in different years. Nomadic species also take part in the between-year fluctuations. The most between-year stability of dominants one can observe at the peak of post-nesting movings at the first half of August.

Keywords: bird communities, seasonal dynamic, taiga, forest steppe

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**Phylogenetic consequences of hybridization in two interbreeding taxa:
Kurdish Wheatear (*Oenanthe xanthopyrmyna*) and Persian Wheatear
(*Oenanthe chrysopygia*)**

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Phylogenetic consequences of hybridization were studied in two interbreeding taxa of genus *Oenanthe*. The breeding ranges of Kurdish Wheatear (*Oenanthe xanthopyrmyna*) and Persian Wheatear (*Oenanthe chrysopygia*) in west and North West of Iran overlap and intermediate color variants can be found. Field works carried out in May 2006 and 2007 and we found our studied taxa inside and outside of contact zone in west, northwest, east and center of Iran. Then, we used DNA sequences of two mitochondrial genes, NADH subunit 2 (ND2); 1030 bp and cytochrome oxidase subunit I (cox1); 730 bp, from 39 individuals and Bayesian methods to derive a phylogeny for comparison between *O.chrysopygia*, *O.xanthopyrmyna* and their supposed hybrid. We added sequences of *O.lugens* and *O.finschii* as close species to *O.xanthopyrmyna* and *O.chrysopygia* to compare also *O.alboniger* as outgroup. Our results confirmed the close phylogenetic relationships of supposed hybrid with *O.chrysopygia* despite a plumage coloration pattern close to *O. xanthopyrmyna*.

Keywords: hybridization, *Oenanthe xanthopyrmyna*, *Oenanthe chrysopygia*, supposed hybrid, contact zone

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Volunteer monitoring program of the avifauna of Attica's wetlands

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From November 2008, Hellenic Ornithological Society has been running a volunteer-based monitoring program of the wetland avifauna in Attica. The wetlands of Attica have been observed to be important habitats for birds and their bird abundance is directly related to the wetland status. The long term program aims to improve knowledge concerning the presence and populations of birds at the wetlands over time, in order to define species trends. The strength of the project lies in its pilot attempt to employ electronic protocols combined with the development of a data base, which enables the direct and fast data processing. During the first year of the program 7 visits have taken place and a total of 19,000 birds from 143 species were recorded, 30 of which are included in Annex I of the EU Birds Directive. The first results reveal that even the smaller wetlands host several bird species. Also, it has been confirmed that the wetlands are used as migration stopovers. This further amplifies their importance, given the general deterioration and decline of such fragile sites along the bird migration route.

Keywords: volunteers, monitoring program, wetlands, Attica

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Evaluation of 69 Important Bird Areas of Greece for their inclusion in the SPA network

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The Special Protection Areas (SPA) network in Greece was considered to be insufficient by the European Court of Justice. The Hellenic Ornithological Society participated in a state funded project for the evaluation of 69 Important Bird Areas (IBA) and their classification as SPAs, aiming for the further improvement of the SPA network. The study was strongly supported by data from field research that targeted at the identification of trigger and delineation species relevant to each site as well as their habitat requirements. The derived information was used to create the boundaries of the proposed SPA sites together with an extended geographic database upon the critical habitats of the SPA trigger species. The expected approval of the proposal by the Ministry of the Environment will provide a significant amendment to the existing SPA network. This is mainly due to the addition of 43 new sites to the network and the refinement of another 23 existing sites with the most up to date species information. The total land area of the network was extended by 1,273,358 ha covering 22% of the country area. Furthermore, the overlap between IBA and SPA has increased from 48% to 73 %.

Keywords: SPA, IBA, trigger species, critical habitats, Natura 2000

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The return of the Pygmy Cormorant *Phalacrocorax pygmaeus* at Amvrakikos Wetlands National Park

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According to local residents, during the 1950s and early 1960s the Pygmy Cormorant *Phalacrocorax pygmaeus* was a common resident and breeder within the Rodia Swamp; it was also frequently found in the traditional fish-traps on the lagoons. These birds almost totally vanished for at least four decades from the Amvrakikos. Even their presence as wintering species was irregular, as shown by the annual midwinter waterfowl counts. During a 3^{1/2} year-long Life-Nature project the species was targeted for monitoring and conservation and after frequently repeated and wide-spread surveys the species was spotted only twice during this period (1999-2003). In the autumn of 2007 a large group of Pygmy Cormorants appeared and overwintered whilst in the following spring about 15-25 pairs nested among a pre-existing large colony of Ciconiiformes. The birds nested and stayed throughout the year at Amvrakikos in 2009 also. By employing a spot-mapping survey and a habitat-use survey method with frequent systematic searches within the northern part of the Amvrakikos Wetlands National Park it was possible to track seasonal distribution and habitat-use. Conservation proposals to ensure the establishment of the species are provided.

Keywords: *Phalacrocorax pygmaeus*, Amvrakikos wetlands

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Atlas of Anatidae populations in India

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We have been monitoring waterbirds since last 20 years, have been coordinating the Waterfowl Count in India since last 10 years and recently published a book on 'Atlas of Anatidae Populations in India', which is the result of exhaustive work by us. For the conservation of Anatidae, the following objectives were identified (a) To provide species estimates of the numbers of individuals; (b) Provide information on site used by population; (c) Provide protection status of all the sites as per the PA system in India and international conventions. To achieve these objectives a number of criteria and definitions were used. Two basic criteria were used to identify as internationally important sites: >20,000 individuals of total number of Anatidae supported; and >1% of a population of more than one Anatidae species supported. These criteria are compatible with the Ramsar criteria for identification of wetlands of international importance. On the basis of these criteria, we have identified most important congregatory sites in India, which are also declared as Important Bird Areas (Islam and Rahmani 2004) as per the IBA congregatory A4iv criterion embraces sites over which flying migrants concentrate. Out of 42 species of Anatidae found in India, six of them are threatened species: Marbled Teal, White-winged Duck, Baikal Teal, Pink-headed Duck (extinct?), Baer's Pochard, Ferruginous Duck, and White-headed Duck. The Atlas has detailed species account of 42 species of Anatidae under the following headings: Sub-species - A note on species and sub-species; Distribution - Information on species distribution worldwide and in India as well as distributional data for the last 20 years extracted from the Waterfowl count; Population size; Movements; Habitat and ecology; Conservation status; Network of key sites; Species count; Protection Status. For each species, a separate Indian map is drawn and state and international boundary are also given.

Keywords: Anatidae Ducks, Geese, Swans, Atlas, Populations, conservation, India

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Forest birds breeding in burnt forests: Preliminary findings after the conflagrations of 2007

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Two years after the major wildfires of July 2007, which affected >50% of upland Aegialeia in the northern Peloponnese, Greece, 65 bird species breeding in the area before the fire were still present in the burnt areas during the next breeding season. Thirty six species were in the burnt mixed oak-pine and fir forest which also included some unburnt (or vigorously developing new foliage) forest patches. All open woodland and forest edge species of the area (e.g. corvids, buntings, chats) were seen using the burnt forest. When 18 true forest species were taken into account (*Dendrocopos*, *Parus* etc.), 16 species (89%) were using the unburnt patches, 16 (89%) were commonly seen using partially burnt trees close (within 100 m.) to unburnt patches and 11 (69%) were commonly seen feeding in the burnt forest away from unburnt patches. Although bird densities were clearly higher in the unburnt patches, most species were extensively using all the burnt area. This indicates that the burnt forest maintains some “forest values” and it is still used by forest bird species. Apart from demonstrating that wildfires are by no means a major catastrophe for birds, a basic conclusion is that, at least from a bird management perspective, no logging of the fire-killed standing trees is required in the burnt areas.

Keywords: forest fires, birds, Peloponnese, Mediterranean, regeneration

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Evaluation of a newly created wetland for waterbirds at the Evros Delta, Greece

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With the restoration of Drana lagoon at the Evros Delta, Greece, in 2004, a wet meadow of 27 Ha was created in the north of the lagoon. The aim of the wet meadow creation was to constitute a fresh water “barrier” for the salt water to intrude the adjacent farmland and to provide an additional available habitat for waterbirds. In order to evaluate the new pond for waterbirds all species were regularly monitored in a monthly basis for four consecutive years (2006 – 2009). In total 37 non – passerine species were recorded, 3 of which are globally threatened (Bittern *Botaurus stellaris*, Dalmatian Pelican *Pelecanus crispus* and Pygmy Cormorant *Phalacrocorax pygmaeus*), 17 are included in the Hellenic Red Data Book and 18 in Annex I of EU Directive 79/409 regarding birds and their habitats. Peak numbers included 500 Pintail *Anas acuta*, 420 Wigeon *Anas penelope*, 80 White Storks *Ciconia ciconia*, 140 White Pelicans *Pelecanus onocrotalus*, 240 Spoonbills *Platalea leucorodia* and 210 Avocets *Recurvirostra avosetta*. Data indicate that the new wetland can provide an additional feeding and resting area for waterfowl and waders, however its value is subject to bad human practices, mainly concerning illegal grazing and hunting.

Keywords: Evros Delta, wet meadow, non- passerines, monitoring

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Effect of climate conditions and time of day on the density and behavior of the Barn Swallow in Khuzestan province, south west of Iran

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The Barn Swallow (*Hirundo rustica*) is a small bird mostly distributed in Europe, Asia, America, Africa and a narrow band in the north of Australia. It has been listed in the LC category of IUCN conservation status. Barn Swallows are migratory, and in the spring they are found in most parts of Iran. They usually prefer living near cities and villages. In the present study, we select Behbahan in the south west of Iran. We try to make a relationship between common flock behaviour and other behaviours with temperature, atmospheric conditions and clock time periods. The highest density for Barn Swallow was observed in a temperature range between 34.5 and 37.5 °C. Chi-Square shows flock size reduction when temperature increases (P Value <0.05). In 95.1% of total observations, they choose cloudy sky for flying and movement. Bird group counts observed between 1 and 3 in sunny and more than 15 individuals in cloudy conditions, once 57.6% and second 36.6% of total observation (P Value 18]. The statistical mode for distance means between individuals (1-5 m) was 72.3%. Also single birds contain 15.8% of total observations. The swift movement to the nests shows two clear peaks: 8-10 and 10-14 o'clock.

Keywords: Barn Swallow (*Hirundo rustica*), habitat, behavior, weather condition, time of day

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The difference in the timing of migration of sex and age groups of some Passerines in Hungary

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Capture data of approximately 140,000 birds collected at Ócsa Bird Ringing Station, Hungary, between 1984-2008 were analysed. The data belonged to 8 species (Moustached -, Reed -, Marsh -, Sedge Warbler, Chiffchaff, Wood Warbler, Blackcap, Garden Warbler). We treated the age groups and – if possible - sexes separately. In spring, the arrival of all species - except the Marsh Warbler, female Chiffchaff and Blackcap - has shifted earlier. In the case of the two sexed species - Blackcap and Chiffchaff - the males arrived earlier than females. In autumn on the other hand, males left the study site on average later than females. The autumn migration of adult birds- other than Chiffchaffs- was earlier than that of the young, while the deviation in timing amongst age groups - except for Marsh Warblers- changed differently. In case of the Marsh Warbler, Wood Warbler, Garden warbler and Blackcap the timing of migration of young birds shifted later, while the timing of adults did not change during the 25 years, therefore the difference between the age groups grew steadily. Our results confirm the importance of treating age and sex groups separately when analysing the impacts of climate change on the timing of migration of passerine birds.

Keywords: migration, timing, age groups, sex groups, Hungary

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The impact of climate change on the biometrics of passerine bird species in Hungary

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We used the ringing data of 12 common passerine bird species for the analysis (approx. 150,000 specimens) ringed in Hungary, at the Ócsa Bird Ringing Station during 1984-2008. Age groups were treated separately. Among the studied species the populations of the Moustached Warbler, the Reed Warbler and the Chiffchaff are isolated in the Carpathian basin, since either the breeding range does not extend north of Hungary or birds from northern populations do not migrate through the region. Although the timing of migration more or less changed for all the examined species, we found a marked change in bodymass and wing length between species with isolated and trans-migrant populations. Decrease of autumn bodymass and an increase in wing length was shown in case of trans-migrant species, while no such pattern was visible in case of Carpathian-basin isolates. The changes in biometrics of trans-migrant species may indicate changes in ratio of individuals originating from different populations. Individuals of the same species breeding in northern populations, due to the longer migration route, have longer wings compared to those breeding south, moreover birds arriving from larger distances use more body fat for flying. Our results possibly indicate that the ratio of individuals from northern populations has increased during autumn migration.

Keywords: climate change, Passerines, migration, biometrics, Hungary

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Population changes of Passerines in Hungary - Comparative analysis of two different methods

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Population trends of Passerines were analysed based on Common Bird Census database of BirdLife Hungary and yearly ringing totals of two ringing stations (Ócsa (47° 17' 49"N, 19° 12'38" E) and Izsák (46° 46'09"N, 19° 19' 46"E) in Hungary between 1999-2008. The populations trends calculated from the Common Bird Census database were negative for long-distance migrant species and stable or positive for residents, partial migrants and short-distance migrants. The population trends from capture data were different and shown small differences with partial migrants having the most negative trends. Survival rate and yearly productivity was investigated for 5 long-distance migrant species based on ringing-recapture data. The significant decrease in yearly survival rates were found for long distance migrants which accumulate large fat stores during migration. For these species the ringing data shown stable population at an optimal breeding habitat, but the CBC data shown decline of the populations. We assume, that these species populations limited by the winter survival rates and first draw back from the suboptimal habitats and their range decreases. During this process the populations at the areas holding optimal habitats look like stable because continuous immigration. These findings show a possibility of strong population decrease for species in Hungary in the near future.

Keywords: population dynamics, Passerines, Hungary, Common Bird Census, survival rate

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Monitoring the population of Lesser White-fronted Geese *Anser erythropus* wintering in Greece: 1996 - 2009

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During the last 14 years (1996-2009), the population of Lesser White-fronted Geese *Anser erythropus* has been monitored in their main wintering sites in Greece and has remained stable for the last 6 years ranging between 43-56 individuals. LWfG spend on average 128 days in Greece; the longest time spent in a single country, during their annual cycle and along their migration route. They arrive at Lake Kerkini in late October – early November and by late December – early January they fly to the Evros Delta where they stay until early March. There are annual deviations to this pattern and also strong indications that this population is using one or more, hitherto unknown, sites between mid January to late February. Through monitoring of colour ringed individuals and satellite telemetry, we know that these LWfG form a major part of the threatened Fennoscandian population and important data on their turnover rate at both Lake Kerkini and Evros Delta have been obtained. The main threat to the LWfG in Greece is illegal hunting, mainly due to confusion with White-fronted Geese; as well as habitat degradation. More research is needed on LWfG habitat requirements in Greece, but also on their local movements and possible additional stopover sites in the Balkans and Turkey.

Keywords: conservation, colour rings, Evros Delta, Kerkini Lake, globally threatened species

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The waterbird ringing station in the Evros Delta, Greece

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Although the wintering waterbird population in Greece is very high, the ringing effort is relatively low. In 2006 the first waterbird ringing station in Greece was established at the Evros Delta and since then it has been operating during the winters. In three special designed permanent duck traps more than 600 birds of five waterfowl species (Mallard *Anas platyrhynchos*, Pintail *A. acuta*, Wigeon *A. penelope*, Garganey *A. querquedula* and Coot *Fulica atra*) were trapped and ringed during winter. Furthermore, two more species were caught by other catching techniques and ringed. These were Mute Swan *Cygnus olor* (during winter) and Great Cormorant *Phalacrocorax carbo* (during the breeding period). A total of 149 birds were controlled from 2 to 370 days after ringing in the same area. Two Mallards were recovered in northern Russia. The first one was controlled in a town park at Semenovskiy region, while the second one was shot at the Inginskiy region, 2665 km from the Evros Delta. These were the first recoveries abroad of Mallards that were ringed in Greece and an indication that some Mallards wintering in Greece breed in northern Russia.

Keywords: Evros Delta, waterbirds, ringing, waterfowl, wetland

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The check-list of the birds of Greece: recent additions and taxonomic changes

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Following the establishment in Greece of the “Hellenic Rarities Committee” (2004), the taxonomic and actual status of all bird species recorded in Greece, have been thoroughly re-examined and compared with the previous check list published in 1997, particularly in view of all recent taxonomic changes and proposals. All new species recorded in Greece since 1996 have been included, one species has been removed from the list and taxonomic changes have been adopted. The current check list of the birds of Greece consists of 442 species, belonging to 66 families and 208 genera. 53 species listed under the categories “Escapes” and “Introduced – Not established” are not included.

Keywords: rarities, avifauna, Greece

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Development of a population model with genetics for application to populations of Cory's shearwater (*Calonectris diomedea diomedea*) in the North Aegean

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Cory's shearwater populations, like all Procellariiforms, exhibit extreme life history traits such as deferred maturity, low fecundity, high adult survival and long life expectancy. Additionally, high levels of natal philopatry and incestuous breeding, lead to high genetic relatedness and low genetic variability within colonies, whereas dispersal between colonies is low. However there is no evidence of genetic isolation in local populations of the species. To see how all these things can be reconciled, especially why genetic differences are so small given the low dispersal rates, we used a modeling approach. A Leslie matrix model was constructed for Cory's shearwater, comprising of 27 age classes in order to study the population dynamics of single colonies. The parameters of the Leslie matrix were then used in an individual-based simulation model to examine the viability of small populations. We also used this model to explore the effects of various levels of migration from neighbouring Mediterranean colonies on the metapopulation dynamics of colonies in the Aegean. This analysis is used to assess factors affecting long-term maintenance of a stable population.

Keywords: metapopulation, seabirds

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Comparison of modelling approaches for estimating abundance patterns of seabirds in the N. Aegean Sea using ESAS data

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Systematic efforts to determine marine Important Bird Areas for the Mediterranean area beginning in 2004 have so far been limited to areas around Portugal and Spain. The aim of this study is to extend this work to the Aegean where our knowledge of seabird populations is limited and to help recognize the important marine areas for seabirds in this region. Under project 07 NAT/GR/00285 in the LIFE program we conducted a survey in the North Aegean Sea using ESAS methodology. In analyzing the data we focus on four species of seabirds: *Calonectris diomedea*, *Puffinus yelkouan*, *Phalacrocorax aristotelis* and *Larus michaelis*. We use and compare different models in order to find the most important parameters determining the distribution of the birds as well as their abundance. Initial estimates of the population sizes and their uncertainty are found, using the jackknife method and the results are refined with the more advanced approaches. These include distance sampling (DISTANCE), maximum entropy (MAXENT) and Generalized Linear and Additive models. The results of the analysis have a number of important conservation implications.

Keywords: seabirds, distribution, abundance, modeling, ESAS

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Why is the female of House sparrow, *Passer domesticus* lighter and smaller in Yatağan, Turkey?

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The House Sparrow (*Passer domesticus*) is one of the most successful animals in adapting themselves to an urban life environment and has a global distribution. We compared three House sparrow populations in Turkey, Antalya (Çıǧlık village), Burdur (Yazıköy village) and Muğla (Yatağan), by using morphometrical parameters. Fifteen morphometrical characters, body mass, wing, 8th primary, tail, bill length, bill width, bill height, length of bill apex to back of head, length from nostril to bill apex, alula, tarsus, 4 nails of left leg, were measured in 109 birds (52 males and 57 females) caught in the three cities. House sparrows were caught near Yatağan Thermal Power Plant (YTPP) which uses coal to produce electric energy in Yatağan. The other caught areas, Antalya and Burdur, do not have any power plant and polluting factory near the area. Polluting heavy metals and gases are emitted by YTPP. We compared the three populations on the basis of gender. The results showed that although we did not find a significant difference between Antalya and Burdur populations, Yatağan females differ significantly in body mass, tail, and 8th primary from the other populations according to Tukey HSD-test ANOVA ($P < 0.01$). Yatağan females were the lightest within these groups (ANOVA $F = 20.343$, $df = 5$, $P < 0.001$). Our results supported previous studies that the body mass of the females in the polluted area is lighter than the other non polluted areas. As a conclusion, the reason for the small size of female house sparrow near YTPP may be the pollution associated with this power plant.

Keywords: House sparrow, *Passer domesticus*, morphometrical, Yatağan Power Plant

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***Larus ichthyaetus* in the northern coasts of the Black Sea: threats and the need for conservation**

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Since 1991 *Larus ichthyaetus* nests on Konsky islands (Yagorlytsky Bay, northern Black Sea coast). The maximum number of nesting pairs in 1990s was 180. In the 2000s on Konsky islands their number decreased to 10-20 pairs. There was a redistribution of the birds in the region. Mostly they have moved to the island of Berezan (Dnepro-Bugsky Lagoon) where there was already a colony numbering 300 pairs. Fifty pairs have moved to the island of Kruglyj (Yagorlytsky Bay). In 2005 120 pairs nested on Orlov island (Tendrovsky Bay). In 2006-2009 there were sharp negative changes of breeding numbers of *Larus ichthyaetus* in the area of the Konsky islands. Birds have left Berezan and Orlov. At present 5 pairs nest on Kruglyj and about 20 pairs on Konsky islands. Nesting success is very low. The basic part of the population has moved most likely to the Sea of Azov. Population changes are connected with the deterioration of ecological conditions on nesting islands (their destruction and flooding, adverse competitive relations with other species, wolves crossing on to islands and preying on the eggs and chicks, illegal visiting of islands by tourists and poachers. There is an urgent need to strengthen the protection of colonies and to apply special actions for the preservation and restoration of the population and their nesting places.

Keywords: *Larus ichthyaetus*, northern coasts, Black Sea, threats, conservation

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