AKDENİZ UNIVERSITY

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2 nd International Eurasian Ornithology Congress

ABSTRACT BOOK

TÜBİTAK - Turkish Scientific and Technical Research Concil

26 - 29 October
ANTALYA
2007

BOĞAZKENT BELEDİYESİ
ANA SPONSOR

Editors : Ali Erdoğan, Tamer Albayrak, İlhami Kiziroğlu, Levent Turan

ERDOĞAN, A, ALBAYRAK, T., KIZIROĞLU, İ., AND TURAN, L. (ED.)

2ND INTERNATIONAL EURASIAN ORNITHOLOGY CONGRESS

ANTALYA, TURKEY

26-29 OKTOBER 2007

JOINTLY ORGANIZED BY

AKDENIZ UNIVERSITY – ANTALYA

AND

HACETTEPE UNIVERSITY – ANKARA

ALI ERDOĞAN, TAMER ALBAYRAK, ILHAMI KIZIROĞLU, AND LEVENT TURAN
(EDITORIAL BOARD)

2ND INTERNATIONAL EURASIAN ORNITHOLOGY CONGRESS

ANTALYA, TURKEY

26-29 OKTOBER 2007

ISBN: 978-9944-0092-0-1

BASKI: SADRIGRAFIK 2007, ANTALYA

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ORAL : O-01

MOLECULAR EVOLUTION OF ISLAND BIRDS, A CASE STUDY FROM THE CANARIAN ISLANDS

MICHAEL WINK

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The Canary Islands (Spain) consist of seven major islands in the eastern Atlantic Ocean. The distance to the adjacent African mainland varies between 110 (Fuerteventura) and 460 km (La Palma). The islands are of volcanic origin and, according to the general consensus, have never been connected to the African continent. The age of the islands increases from east to west and ranges from less than one up to twenty million years. Together with Madeira, the Azores and Cape Verde Islands, the Canary Islands form the Macaronesian Archipelago. Because of these characteristics, the Canary Islands are a prime location for investigations on the evolution and development of oceanic island biota, and a steadily increasing number of molecular phylogenetic and phylogeographic the different animal taxa are being published. These papers highlight the differences in the colonisation pathways and histories for different taxa. Our current knowledge of the taxonomy and systematic position of the Canarian avifauna is mainly based on morphological and bioacoustical studies from the twentieth century. Presently 6 endemic species and 29 endemic subspecies; more than 60% of the taxa appear to be endemic. However, the systematics of an increasing number of Canarian bird taxa is being investigated using molecular tools, for example, pipits Anthus spec. (Arctander et al. 1996), chaffinches Fringilla spec. (Marshall and Baker 1999), stonechats Saxicola spec. (Wittmann et al. 1995; Wink et al. 2002a, b), chiffchaffs Phylloscopus spec. (Helbig et al. 1996), bustards Chlamydotis spec. (Gaucher et al. 1996; Broders et al. 2003), robins Erithacus spec. (Dietzen et al. 2003), goldcrests Regulus spec. (Pa¨ckert et al. 2006), canaries Serinus spec. (Dietzen et al. 2006) and wood- peckers Dendrocopus major (Garcia-del-Rey et al. 2007).Modern molecular genetics techniques have become valuable and widely applied tools

for answering phylogenetic questions, particularly in the case of morphologically similar and closely related taxa. As a result of these investigations, the status of several endemic taxa could be corroborated and some subspecies could be ranked as true species. In addition, we have discovered already a number of hitherto unknown taxa, such as Erithacus. [r.] marionae nov. spec., Regulus r. ellenthaleri nov. ssp., and Parus tenerfiffae hedwigii nov. ssp. The Macaronesian islands are hotspots of evolution comparable to the better known Galapagos archipelago.

Key words: Phylogeny, molecular systematics, Canary islands

Oral : O-02

A NEW IMMUNOLOGICAL TECHNIQUE TO TEST THE RELATION BETWEEN BLOOD PARASITE AND IMMUNITY IN WILD BIRDS.

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Life history theory predicts that organisms might decide the allocation of their limited resources on growth, reproduction and body maintenance. Parasites exploit resources from their hosts in order to improve their own reproductive success whereas hosts have evolved immune system to control infections. Strong immune responses are beneficial because they improve the fitness of the hosts, but there are significant costs associated with production of an immune response. Environmental factors can affect the ability to mount an immune response, such as predation or parasitism. We tested if female parasite load affects development of the immune system of the nestling using the highly colonial house martin Delichon urbica as a model system. We used the phagocytosis activity of heterophils as a new immunological assay to measure immune responses in wild birds. We showed that there is a correlation between immune system of female adults and their offspring, but not between males and nestlings. Quality of nestling immune response was affected by female intensity of infection.

ORAL *:* O-03

A NEW RECORD OF A BIRD SPECIES FOR VAN LAKE BASIN: WHOOPER SWAN (CYGNUS CYGNUS)

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Whooper Swan (Cygnus Cygnus) are known to usually hatch in the south of tundra in the world. In Turkey they are usually observed in winter, in the south and west of the country. There is no record concerning the spread of the species over Van Lake Basin. The first record of the Basin was made in winter of 1995, with a population of 164 from Arin Lake. This record seems to be the first record for the East Anatolia Region. The study was carried out in the following years and they were observed in many places of the Basin. Based on the inscriptions in the region, the species was decided to have been living here for at least 1100 years. The reason the species has not been determined so far is the difficulty of the observation in severe winter conditions.

Key words: Whooper Swan (Cygnus cygnus), Van Lake Basin, East Anatolia.

Oral : O-04

CONGRUENCE IN GEOGRAPHIC DISTRIBUTION OF AVIAN SECONDARY CONTACT ZONES IN THE MIDDLE EAST

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The Middle East is an important secondary contact zone for a considerable number of taxa from Western and Eastern Palearctic and from the Great Saharo-Sindian desert belt. Secondary contact zones have been frequently reported for birds in this area, representing major zones of biogeographic discontinuity among western and eastern taxa, and probably current or former barriers. In all, some 12% of all bird species resident in the Middle East show secondary contact. As to increase our understanding of the evolutionary, geological, and environmental processes that led to the existence of these contact zones, we studied their geographic positioning. Using WORLDMAP program, we digitized distribution maps of 56 species, and analyzed their distribution patterns. Birds with secondary contact in the Middle East are restricted to three orders: Piciformes (3/12 breeding residents), Passeriformes (45/221) and Falconiformes (8/41). Secondary contact zones show a high degree of congruence between the three orders. In Piciformes and Falconiformes it is confined to the northern part of the Middle East, whereas in addition to this area, a small number of Passeriformes show secondary contact on the Iranian Plateau. This suggests that the formation of secondary contact zones in these taxa are guided by the same external forces.

Key words: Species richness, Birds, parapatric, hybridization

Oral : O-06

DO BLOOD PARASITE INFECTIONS COMPROMISE AVIAN MIGRATION CAPABILITY?

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Study of migratory birds captured for ringing at the Bird Sanctuary in Eilat and in the Jordan Valley in Israel allowed us to evaluate the levels of blood parasite infections. In spring, migrants infection prevalence among 1780 examined birds was on average 33% by Haemoproteus spp., 9.3% Leucocytozoon spp. and 4% Plasmodium spp., all other parasites (trypanosomes, microfilaria and haemococcidians) occrred rarely. Prevalence of infection was significantly lower among autumn migrants. In general, infection intensities were usually low to moderate. However, blood film of some birds, displayed heavy parasitaemia with either Haemoproteus spp. or Leucocytozoon spp. Level of parasitaemia with Plasmodium spp. were usually low. Case study of incidences of such elevated parasitaemia (from close to 1% to as high as 47%), among 64 birds of diverse species, did not correlate with the birds' body mass loss, fat depletion or any other sign of poor condition. Only in two birds body mass was below the observed range: in Hippolais pallida with 6.6% parasitaemia with Haemoproteus belopolskyi, and Phylloscopus trochilus with 30% parasitaemia with H. cf. belopolskyi hyperinfection and relapse. Contrary to our expectations, the data suggest that blood parasite infection does not appear to compromise avian capability for long or short distance migration. Some bird species (notably Hippolais pallida and Lanius spp., a southern migrants) apparently continuously coexist with elevated levels of Haemoproteus spp. parasitaemia, which might suggest of innate tolerance to infection.

ORAL : O-07

FOOD-INTAKE OF CHICK IN BLACK VULTURE (AEGYPIUS MONACHUS)

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One of the species under the risk of extinction is black vulture. They exist in Europe and Turkey in a very small number. They live in our country as local species. Their breeding places are limited to Ankara-Kızılcahamam and Eskişehir-The Mount Türkmen Baba. Their incubation period is more than 50 days. The chicks reach the growth to leave their nests after the 120th day. Total duration of incubation and fledging is more than six months. The chicks start food intake by showing certain behaviours. This is a ceremony formed of begging, sounds and actions. The parents take care while feeding the chick. The male or the female feeds the chick together or separately. The chick is given small pieces of food in early weeks. The pieces of food given grow in accordance with the chick's growth. The chick takes the food from the adult's beak in three ways. The pieces of food fallen are taken from the ground. The adults perform the chick's care as well. The chick facilitates food picking through standig on its belly, knee or fingers. Division of labour is seen between the parents during the chick care. In the protection of this species, which is under the risk of extinction, it is important to know their behaviours. Protective studies towards the species whose behaviours are known will be succesful.

Key words: Black vulture, *Aegypius monachus*, behaviour, food-intake, division of labor

ORAL : O-08

GENETIC STRUCTURE AND PHYLOGEOGRAPHY OF WHITE-THROATED DIPPER CINCLUS CINCLUS IN IBERIA

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The white-throated dipper, Cinclus cinclus, has its habitat in the rivers of mountains. It has the widest distribution, with populations spread across Europe, Asia and North Africa. The population breeding in Spain is 6200 to 8000. In this paper we present the preliminary results of a study about the genetic structure and the phylogeography of the white-throated dipper from seven mountains regions of Iberia, Mountains of Galicia, Cordillera Cantabrica, Pyrenees, Sistema Iberico, Cordillera Central and in southern Mountains Sierra Cazorla and Sierra Nevada. For five years, since 2002 to 2006 we obtained about 350 blood samples from individuals. We analized an 867 bp fragment of the cytochrome b in mitochondrial DNA using the primers HP1056 and HP1070. Of the 867 positions 85 sites were polymorphic, and 18 were parsimony informative. There were a total of 38 haplotypes for the 210 individuals sequenced. The haplotype diversity was 0,706 ± 0,032 and the nucleotide diversity was 0,00209 ± 0,00045. The results suggest more affinity between Northwest and entral populations of Iberia that Pyrenees, Southeast Sistema Ibérico, and South population. The Sierra Nevada population showed the greatest differences with the others populations.
Key words: Cinclus cinclus, Genetic structure, phylogeography, Iberia,

Oral *:* O-09

HIERARCHY RELATIONS IN SPARROWS (PASSER DOMESTICUS) DURING ACUTE ISOSPORA (PROTOZOA, COCCIDIIDA) INFECTIO

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Parasitic infection may change the equilibrium between the energy the animal spends for maintaining its social status and the costs of it, and so it may influence the social status of an animal in a group. We investigated whether the acute infection with Isospora spp. has any effect on the hierarchy of male house sparrows and how the infection influences the behaviour, immune status and fitness of these birds. Furthermore we tested if the "badge of dominance" still supplies any information for hierarchy status of infected birds during the acute stage of infection.The results showed that during acute infection, male aggressiveness is significantly related to the sedimentation rate, cell-mediated immune response and to the size of black breast patch. Only during acute infection there was positive correlation between the patch size and male aggressiveness. Body mass losses of birds depended on the achieved hierarchy status. It is interesting that "badge of dominance", a signal developed during the moult, remains informative and "honest" signal several months later, expressing energy reserves of the bird faced with a demanding stressful situation like acute infection, for example.

Key words: Coccidia, house sparrow, parasites, dominance

Oral : O-10

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 (Miller et al. 1972). The presentation and paper will discuss the structure of the model, its findings and application in the field of ornithological studies.

ORAL : O-11

KARYOTYPE ANALYSIS OF GREAT TIT (PARUS MAJOR) IN NOOR FOREST PARK (MAZANDARAN-IRAN)

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Cytogenetical characters of great tit (Parus major), were studied in Noor forest park (Mazandaran-Iran). After in vivo colchicine treatment, liver, bone marrow of femur and tibia tissues were used and karyological parameters such as major and minor arms, centromeric index, arm ratio, relative length, total length and variation range of chromosomes length were determined on chromosomal slides as well as karyogram and ideogram. Final results show that maximum metaphase index were belong to bone marrow of tibia samples. Chromosomal number varied between 70-80, consist of one pair metacentric, three pairs submetacentric and six pairs acrocentric which were constant and visible on all spreads and the rest were variable microchromosomes. Sex determination mechanism were defined as ZW; but in none of the females studied could a W chromosome be identified, probably it placed in microchromosomes set, which will needed to future studies. Karyological parameters show that centromeric index, arm ratio, relative length and variation range of chromosomes length were between 20-50, 1-4.7, 4-24 and 0.83-5 respectively and total length and NF were 20.82 and 26. karyotypic formula were determined 2n=2m+5sm+12a+(56 5 microchromosomes).

Key words: Great tit, Chromosomal Spread, Karyotype, Cytogenetic, Iran.

Oral : O-12

MORPHOMETRICAL STUDY OF CRESTED LARK GALERIDA CRISTATA IN ZABOL (SISTAN & BALUCHESTAN-IRAN)

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An investigation on morphometric characters of Crested Lark (Galerida cristata), sixty specimens (32 males and 28 females) collected during autumn and winter 2005 from Zabol region was done. Seven standard traits including total length, wingspam, tail length, bill length, tarsus length, third toe, and weight were measured. Mean of characters between males and females was compared using t and Mann-whitney tests. The statistical analysis indicates that there is significant difference in wingspam between the males and females ($P<0.05$). In addition, in spring 2006 specification of 28 nests of the studied samples comprising external and internal diameters, depth of nests, clutch size, weight and eggs dimensions were recorded; 3 eggs in nest (54.5%) are the most abundant.

Key words: Crested Lark, *Galerida cristata*, Morphometry, Zabol, Iran.

ORAL : O-13

PHYLOGEOGRAPHY OF HAEMOPROTEIDS AND MALARIA PARASITES (HAEMOSPORIDA, HAEMOPROTEIDAE, PLASMODIIDAE) OF BLACKCAP SYLVIA ATRICAPILLA IN EUROPE

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Blood samples from juvenile blackcaps (Sylvia atricapilla) from ten local European blackcap populations (Southern Spain, Central Spain, Northern Spain, France, Belgium, Lithuania, Sweden, Russia and Bulgaria) have been investigated to determine lineages of Haemoproteus and Plasmodium spp., which are transmitted at the study sites. We found that five Haemoproteus parabelopolskyi mitochondrial DNA cytochrome b gene lineages (hSYAT1, hSYAT11, hSYAT13, hSYAT2, and hSYAT3) that are widespread in different territories of Europe (Southern Spain, Central Spain, Northern Spain, France, Belgium, Lithuania, Sweden, Russia and Bulgaria). It is probable that H. parabelopolskyi lineages hSYAT1, hSYAT2, hSYAT11, and hSYAT13 and H. sp. lineage hSYAT3 have spread to the Northern Europe from South-Western Europe and have already adapted to transmission in the Baltic region and Scandinavia. A process took place relatively recently after the last glacial period. We also found that two malaria parasites Plasmodium relictum (pSGS1) and Plasmodium spp. (pCOLL1) parasitize blackcaps in Southern Europe (Spain and Bulgaria).The H. majoris lineages hPARUS1 and hWW2 parasitize blackcaps only in Northern and Middle

Europe. It is possible that this parasite is of recent Northern origin in blackcaps and it may be an agent of emerging haemoproteosis in this bird in Southern Europe in the future.

Key words: Avian blood parasites, Haemoproteus, Plasmodium, phylogeography, PCR

Oral *:* O-14

PURPLE GALLINULE POPULATION (PORPHYRIO PORPHYRIO) IN THE KIZILIRMAK DELTA

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During the period of 2005 - 2007, field work was performed to census the population of purple gallinules (Porphyrio porphyrio) in Kızılırmak Delta, Samsun. This study includes point counts of the total population and nest searches for determining the breeding population size. Based on the point count results total population is estimated between 1300 - 1500 individuals with 200 - 300 breeding pairs. The results of the study reveals that the average number of breeding pair would be 1547 when minimum territory area are used in calculations, whereas this number is reduced to 130 when the maximum territory area is used. These values suggest that at present available nesting area is not a restrictive factor for the population of this species. The reason for the rapid enlargement of the population in Kızılırmak Delta is possibly due to the species' higher reproductive potential with low winter mortality.

Key words: Purple Gallinule (*Porphyrio porphyrio*), Kızılırmak Delta, determination of population, point census.

Oral *:* O-15

ROLL AND IMPORTANCE OF ACCUMULATION LAKE GRUŽA IN BIRD MIGRATION

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Artificial accumulation Lake Gruža fills the depression of the Knićko Field, situated between the mountains Gledićke and Kotlenik. It was formed mostly in order to provide water supply for industry and residential of the Kragujevac District. According to its advantage location, it lays on predicted moravsko-vardarskom migratory route. In this paper it has been showed ringing data within this area during autumn and spring migration of resident and transitory population of passerines and data obtained during the winter months, for lake's surface is rarely frozen, so it presents wintering area for numerous waterfowl flocks. During the research, it has been recorded in total 153 bird species. The most abundant month was January, when there were detected 9577 waterfowl individuals from 29 species. During the spring and autumn migration, 370 bird individuals were banded, form 32 mostly passerines species. Ringing data showed that accumulation Gruža indeed has important roll in bird migration, along mentioned migratory route, for it enables the migrating birds to rest, regain their strength and recharge the energy supplies before continuing the migration. Moreover, importance of accumulation is greater when we know that significant number of wintering and migrating birds are rare and endangers, not only in Serbia, but allover the Europe.

Key words: migration, waterfowls, migratory route, ringing

Oral : O-16

SIZE-STRUCTURED INTERACTIONS BETWEEN PISCIVOROUS WATERBIRDS AND FISH: WHO CONTROLS WHOM?

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Size-structured predator-prey interactions between the Red-necked Grebe (Podiceps grisegena), a medium-sized piscivorus waterbird, and the Common Carp (Cyprinus carpio) were examined along a gradient of three size-related ontogenetic carp stages corresponding to consecutive year classes (0+, 1+, 2+). Carp cohorts showed differential vulnerability to grebe predation: 0+ individuals were consumed both by adult and young grebes; one year or older fish grew too large to be eaten by chicks, but at smaller sizes were taken by adult birds; two year old fish achieved size refuge from both adult and young grebes. Fish size was critical to grebe fledging success. Grebe pairs nesting on ponds stocked with 0+ cohorts achieved markedly higher fledging success than pairs on ponds stocked with 1+ carp, where grebe broods experienced heavy losses and 1/3 of families suffered total brood failure due to undernourishment-related mortality. Breeding grebes avoided 2+ ponds. Grebes relied on fish as an essential food source for chicks, but non-fish prey (invertebrates and small tadpoles) constituted a large proportion of prey delivered to the young grebes. However, this prey offered grebes no competitive refuge: abundance of amphibian larvae and macroinvertebrates decreased across the gradient of carp age/size. These results suggest that omnivorous fish prey gaining a size advantage over an avian predator may control its alternative food resources and in consequence restrict its recruitment.

Key words: piscivorous birds, predator-prey interactions, food webs

Oral *:* O-17

STATIC AND DYNAMIC SEXUAL TRAITS IN THE WHITETHROAT (SYLVIA COMMUNIS).

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In whitethroats, a monogamous species with biparental care, females select males on the basis of their sexual advertising which involves singing from a perch and song flights. Males presenting relatively more versatile song and more showy flights have grater mating success. In the handicap experiment males were exposed to a stressor (5% body mass weight attached to the tail feathers). Such a treatment limited the elaborated song flight made by males which in turn lowered their mating success. However, the song structure of handicapped individuals remained intact. Thus, it appears that the performance in song flights is a dynamic handicap trait which responds to a relatively small change in condition of the male, whereas the song versatility is a static trait which may provide information about genetic quality of the individual.

Key words: sexual selection, Sylvia communis

Oral : O-18

THE DECLINE OF BENGAL FLORICAN HOUBAROPSIS BENGALENSIS IN NEPAL

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The Bengal florican (Houbaropsis bengalensis), a habitat specialist bird, is one of the three bustards found in the Indian subcontinent. It belongs to Gruiformes order and Otididae family. It is listed as endangered on the IUCN Red Data Book, as protected on National Parks and Wildlife Conservation Act of Nepal and under Appendix 1 of CITES. A survey of the Bengal florican was carried out in April-May 2007 in Suklaphanta Wildlife Reserve, Bardia National Park and Chitwan National Park of Nepal. The aim of the survey was to determine status, distribution and population change. The methods involved counting of lekking sites and identification of territories. A total of 8-9 males and 2 females at Suklaphanta, 1-2 males at Bardia and 5-7 males at Chitwan was recorded. Compared to the past surveys, the minimum population of male florican has declined by 70% since 1982. Probable threats include loss of short grassland by anthropogenic and natural factors, inappropriate grassland management practices, disturbances and susceptibility to predators. Appropriate management interventions including proper timing on burning/cutting, uprooting of unfavorable species from the grasslands, and captive breeding and releasing chicks in their natural habitats are recommended for long term conservation of this endangered bird.

Key words: Bardia, Bengal florican, Chitwan, Nepal, Shuklaphanta,

Oral : O-19

THE FIRST DATA OBTAINED CONCERNING THE DETERMINATION OF AVIAN INFLUENZA A VIRULENCE IN SOME AVIAN SPECIES IN VAN LAKE BASIN BY REAL-TIME PCR, THEIR ISOLATION AND SUB-TYPING.

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**BORNOVA VETERINER KONTROL ARAŞTIRMA ENST.İZMİR

Turkey is one of the most significant places of the world in terms of bio-variety. The contribution of living organisms in the marshy places to this variety is immense. Turkey has more marshy places than Europe and Middle East. One-third of marshy places in Turkey is in Van Lake Basin. On the other hand, the basin is one of the basic routes for migratory birds which makes it a twice more attractive place for the birds. Consequently a study about Avian Influenza has been thought to be necessary and useful. The project was given support by TUBITAK (Turkish Scientific Research Institute) on 15 January, 2007. Sample collecting started on 24 February, 2006. 1336 faeces samples were collected within 16 months and stored in deep freeze at -80 C, connected to UPS. The samples were largely taken migratory birds. Of the samples, 500 samples were inoculated into embriyonated chicken eggs at Bornova Veterinary Control and Research Institute. Avian influenza A viruses were isolated from the 3 faeces of Anas cylpeata (Shoveler) and 3 faeces of Anas cerecca (Teal). The virus samples of Shoveler were sub-typed and were found to be H1N1. The samples from Teal have not been sub-typed yet. As soon as the equipment is completed, the remaining tests will be performed.

Key words: Avian Influenza Virus (AIV), H1N1, Anas cylpeata (Shoveler), Anas cerecca (Teal), Van Lake Basin, Turkey.

Oral : O-20

THE INCIDENCE OF SECOND BROODS IN GREAT TITS IN A CONIFEROUS FOREST OF THE EAST MEDITERRANEAN REGION: PRELIMINARY OBSERVATIONS.

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A general pattern emerging from a large and geographically widely spread number of studies on the breeding biology of Great Tits in the western Palearctic is that second broods are commoner in populations breeding in lower latitudes and in coniferous rather than deciduous forests. We present data describing the frequency of second broods in a population of Great Tits and investigate the degree to which factors such as the timing of the breeding season (initiation and duration of first breeding attempts) and prevailing weather conditions can explain the variation in the proportion of second broods between years. Our data are based on a long-term study of the breeding biology of Great Tits occupying nest boxes in a pine (Pinus brutia) forest on the island of Lesvos (N Aegean Sea), for eight seasons (1999 - 2006).

Key words: Great Tit, Parus major, Pinus brutia, second clutch, breeding biology, coniferous, Mediterranean

Oral : O-21

THE PROBABLE REASONS OF MEDITERRANEAN GULL (LARUS MELANOCEPHALUS) NUMBER DECREASING IN THE NOTHERN COASTS OF THE BLACK SEA

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Since middle 70 years the number of the Medgull in Europe began to grow, the small breeding groups in series of countries have appeared which have become stronger, having formed stable colonies with number, changed on years, (Ardamatskaya, 1999). Now it is possible to distinguished some such large territorial breeding groups: North-European, Mediterranean, Central European and Azov-Black Seas. In 70-90x years the Asian breeding groups - Manych-Azerbaijan has appeared. The number of breeding pairs of the Azov-Black Sea local population - 100-120 thousand pairs until recently dominated. Per 90s the number of Mediterranean Gull breeding pairs in the Black Sea Reserve (Tendra Bay),which are basic place for this species, was from 50 % up to 70 % from total population number. In the last period the cases have become frequent, when this species did not breed (in 1993, 2001, 2004, 2005, 2006). Thus, per the last years in the Black Sea Reserve is watched the inconvertible markedly decrease of Med Gull numbers. The total number in 1999 was 16000 nesting pairs, in 2000 – 42500, in 2002 – 20000, in 2003 – 40000. Only in 2007 species began renewed its number on the islands of Tendra Bay (28 000 nesting pairs).The probable reasons of decreasing of number 1. Sharp change of weather requirements at the first stages of a nesting period (too late vernal frosts, strong storms and rains); 2. Deterioration of breeding conditions: decreases of the nesting areas caused of fracture and waterlogging of islands, changes of vegetative associations; 3. Changing of fodder requirements for species both in a vernal period, and in a continuance of nestlings feeding (cutting of cultivated areas in the breeding district, change of culture of a use of land, augmentation of distance from breeding places up to

natural fodder biotopes).4. Modify structure of island community of birds (the implantation of new species), which has caused an exacerbation of the interspecific competitive relations.5. The decreasing of total potential reproduction and breeding success of a population caused by unstable weather requirements and late dates of breeding, strong press of predation, territorial competition, non-breeding of a part of the adult birds. 6. Low renewed of a population because of high percent of loss of young birds on a migratory trajectory (by materials of ringing) and loss of adult birds on fields from poisoning with agricultural chemicals, on coasts in places of ecological catastrophes) and other unknown cases. Necessary main directions of management for maintaining stable breeding of the Mediterranean Gull in the Black Sea Biosphere Reserve is follow: 1. Carrying out of conventional biotechnical measures on islands Tendra and Yagorlitsky bays in a vernal period. 2. Multifold learning of species and its changed habitat, as necessity of protection: study of islands, seaside steppe, bays, as habitats; study of effect of the direct and oblique negative factors; study of fodder basis and trophic connections and feeding behavior; learning of a biology of the Medgull and attendant species, structure of polyspecific communities, competitive relations in changed requirements, its demographic parameters. 3. Special system of management of nesting and feeding places. 4. Ecological education of the local population.

Oral : O-22

THE SPATIAL AND TEMPORAL DISTRIBUTIONS OF WATERBIRDS IN WEST ANATOLIAN WETLANDS

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The wetlands in Turkey which have increasingly suffered from global warming and drought are highly important for migratory birds. Many migratory birds visit the wetlands in western Anatolia during summer and winter migrations. Many birds are known to breed in Turkish wetlands. In this connection, it is important to know the spatial and temporal distributions of water birds to make ecological assessment. We seasonally studied the avifauna of Akşehir - Eber and Köyceğiz lakes and then compared the avifauna of other lakes previously studied. The comparison was performed NTSYS-pc program using the quantitative data, and then seasonal similarity of lakes was revealed by cluster analysis. Our findings revealed the spatial and temporal migration patterns of the aquatic and wading birds in western Anatolia.

Key words: birds, seasonal similarity, wetlands, Anatolia

Oral : O-23

THE SPATIAL HETEROGENITY OF THE BIRD ASSEMBLAGES AT THE WESTERN KHENTEI MOUNTAINS (NOTHERN MONGOLIA).

IRINA POKROVSKAYA

The study area is situated at the transitional belt between taiga zone and forest steppe and has mountainous relief with altitudinal differences from 900 to 1600 m above sea level. Bird assemblages were monitored in 8 various biotopes during summer seasons 2003-2007. The spatial heterogenity of the bird assemblages is high and strongly depends on vegetation structure.The different features of structure influenced at different characteristic of bird assemblages.. The sufficient volume of the vegetation directly defines the density of birds, and its prevalence in one of the biotope level defines high total bird density . All forests bird assemblages are prone of large immigration of few taiga species, mainly Parus montanus, from the nothern taiga zone at post-nesting period. The intensity of immigration coinsides with altitudinal gradient, having maximum above and strengthen the similar trend of the density at the breeding period. The trend of species diversity has opposite direction. The faunistic composition also have distinct trend along altitudinal gradient: the most diverse in the river valleys with prevalence of Mongolian and Chinese species. The essential number and density of Siberian species define the pattern of bird assemblages in the taiga forests above at the middle-mountaneous plateau.

Oral : O-24

THE STUDY OF DROUGHT EFFECTS ON DISTRIBUTION OF BLACK FRANCOLIN FRANCOLINUS FRANCOLINUS IN SISTAN (IRAN)

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Sistan has recently experienced drought from 1377 and exposed different climatic conditions due to consequent changes of ecological and biological indexes. In 1384 in order to distribution compaison of francolin, field information, documents and public reports were used before and after drought and its respective distribution map was prepared using GIS.Study of changes of distribution clarified that reduction of vegetation cover play the most important role in decreasing francolin's population and range distribution so that its habitat has decreased from 50% of the Sistan area to less than 20%. For the time being, population density of francolin is up in natural vegetation places or cultivated regions such as Milak, Shirdel river, Niatak forest, Jahangir, Mohammad shahkaram and Khajeh ahmad whereas it is medium in Emamieh, Bonjar, Zabol, Jalehi and Bonjar canal, Khamak and Zahak, low in hamoon-e-saberi, Gaz angoori, Adimi, Mile Nader, Khajeh mountain, Songol and Shileh entrance and has extincted in Dust mohammad, Takht-e-edalat, Ghorghori, Mirgol tower, Lotfollah, Tuti, west rangelands of Varmal and around Shileh river.

Key words: Black Francolin, Francolinus francolinus, drought, Sistan, Iran.

Oral *:* O-25

UNDERSTOREY BIRD SPECIES COMPOSITION IN PRIMARY AND OLD LOGGED FOREST OF MIXED-HILL DIPTEROCARP FOREST, PENINSULAR MALAYSIA

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The major cause of forest disturbance in Malaysia is through logging activities. Logging has been thought to affect the distribution and abundance of forest food resources that are necessary for wildlife existence. The objective of the study was to determine understorey bird species composition in two forest types: primary forest and old logged forest. The study was conducted at mixed-hill dipterocarp forest of Peninsular Malaysia using mist-netting method. A total of 10,000 netting hours was conducted in each study site. Results showed that 66 species of birds with 348 individuals were captured in primary forest while only 55 species with 389 individuals were captured in old logged forest. This suggested that bird species composition was higher in primary forest. The diversity analysis (e.g. species diversity, species richness and species evenness indices) also confirmed that the species composition of understorey birds was higher in the primary than logged forest. Most of the species that were absent in primary forest (e.g. bulbuls and tailorbirds) but present in logged forest were considered secondary forest species. Vice versa, most of the species that were present in primary forest (e.g. babblers and flycatchers) but absent in logged forest were considered primary forest species. Even though the number of species was lower in old logged forest, the total number of individuals captured was higher. This pattern was contributed mainly by the presence of super abundant species particularly bulbuls and spiderhunters in the logged forest. Factors such as changes in the microclimate condition and sensitivity of the undestorey primary forest birds to the microclimate changed might have affected the species composition.

Key words: Primary forest, Logged forest, Understorey birds, Species Composition, Diversity indices

Oral : O-26

RECENT POPULATION TRENDS OF MIGRATORY BIRDS AT EILAT, ISRAEL- A CAUSE FOR CONCERN

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Visual migration surveys and long-term ringing stations, especially at established migratory bottlenecks, are a vital tool to evaluate population fluctuations in environmentally sensitive species. Raptors are important bioindicators that help identify environmental catastrophes. Substantial proportions of the global population of Steppe Eagles concentrate at Eilat, during the spring and autumn migrations, but counts from 12 spring migration surveys, between 1977 and 2007, indicate a constant decline in Steppe Eagles. Further, the number of juveniles dropped from 30% in the early 1980s to 9-13% from 1999 to date. The numbers observed at Eilat are well below the range of the fluctuations observed in previous surveys. Yosef & Fornasari (2004) considered the the decrease in the total numbers of Steppe Eagles, and the decrease in proportion of sub adults within the population, to be a result of the Chernobyl accident on 26 April 1986. This is further reinforced by the fact that in surveys conducted in the springs of 2005-2006 the number of Steppe Eagles remained at 9000-10000 Eagles/season. The worrisome point is that in spring 2007, exactly 20 years since the Chernobyl incident, the number of Eagles dropped to 2858 Eagles. This is also evident in the number of Eagles observed on the peak days - 6949 Eagles between the years 1977-1986, 1523 between 1987-2006, and only 505 in spring 2007. The estimated life span of the Steppe Eagle is 40 yrs; hence T50 should be around 20 years, which is spring 2007. Bird ringing started in Eilat in 1984 and has continued since. During spring two distinct waves of migration are apparent - one in early March and the other in early May. Numerically the volume of migration in May has always been almost three times the volume of migrants trapped in March. However, in 2006 we noticed that the migration died out in midst April and that there was no May migration through the

region. The same pattern has occurred in spring 2007 suggesting that this is not a solitary even! t and one that must be considered seriously because several hundreds of millions of birds that comprise the breeding populations of Europe and Asia appear to have simply disappeared from our skies. This almost overnight disappearance is unusual in all of our 24 years of ringing. The species most affected by the May disappearance is the Blackcap (Sylvia atricapila). But also affected are 10s of other May migrant species such as Garden Warbler (S. borin), Olive Tree Warbler (Hippolais olivetorum), Willow Warbler (Phylloscopus trochilus) and others. The disappearance of this wave is worrisome because of the paucity of monitoring of bird populations from Eastern Europe to eastern Asia, the source of the majority of the bird populations that migrate through Eilat in May. Although our findings are only for one year for the Steppe Eagles, and two years for the passerines, we consider it imperative that the global community awaken to the situation as observed at the migratory bottleneck of Eilat. If not the world might discover, yet again, that we waited a bit too long and yet another species, or even a whole guild, is on its way to oblivion as a result of human activity and the scientific communities (cautious) inactivity.

Key words: Population declines, migration, Eilat, Steppe Eagle, Passerines

Oral : O-27

SENESCENCE, BLOOD PARASITES AND IMMUNE SYSTEM.

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Senescence is the progressive loss of functionality accompanied by decreasing fertility and increasing risk of mortality with age. The immune system deteriorates with ageing, causing a reduction in the ability to fend off parasites and prevent diseases. Therefore, parasitism has been suggested to be involved in senescence. Here we analyzed age-specific prevalence and intensity of blood parasite infection (with Haemoproteus and Trypanosoma) and leukocyte counts in two avian hosts, the house martin Delichon urbica and the barn swallow Hirundo rustica, by annual captures of the same populations. In house martins, prevalence increased in early life reaching a plateau at middle age (e.g. at three years of age) and decreasing at older age. In barn swallow, no relationship between prevalence in parasite infection and age was observed. Individual house martins and barn swallows that survived until very old age had significantly more circulating leukocytes and lower prevalence of blood parasites when young than did non-survivors. By analyzing a cohort of individuals we show that the presence of Haemoproteus reduced life span in house martins. The immune system deteriorated with age as shown by decreasing concentration of leukocytes in subsequent capturing years in both host species. This provides information consistent with the hypothesis that immuno-senescence and associated increases in parasitism constitute a mechanism generating senescence.***Key words:*** aging; barn swallow; house martin; leukocytes; survival.

Oral *:* O-28

HABITAT EVALUATION FOR KRUEPER'S NUTHATCH: A GIS-BASED APPROACH

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We evaluated habitat quality for Krueper's Nuthatch (*Sitta krueperi*) using a geographic information system (GIS). First, we digitized and transformed vector images to raster images, the topography map, vegetation map, river map, lake map, road map and villages/towns map by Geomedia Professional and grid module of it and gave each map layer a suitability index based on our perceptions of the needs of Krueper's Nuthatch. Second, we overlaid these maps to obtain an integrated map of habitat quality. Finally, we compared the calculated habitat quality with actual distribution of Krueper's Nuthatch. We found that the birds were almost always located at the site of high quality (habitat suitability index (HIS)>0.6), which indicated that the factors we selected were important for Krueper's Nuthatch.

Key words: Krueper's Nuthatch, *Sitta Krueperi*, GIS, habitat suitability index, distribution

Oral : O-29

THE BIRDS OF TURKIYE SPECIESLIST AND RED DATA BOOK OF TURKISH-BIRDS 2007

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This study will focus on the status of bird species of Turkey and the threats that those bird species are faced with. According to the results of the 2007 evaluations, the nonpasseres that belong to 21 orders include 283 bird species belonging to 47 families. On the other hand, it is observed that passeres group with one order has 219 bird species in 27 families, in a total of 22 orders, 74 families and 502 bird species. 48 of those species were randomly observed. That is, those bird species were observed once or twice in the area. They were temporarily registered to the list of Turkish bird species. Detailed observations are required in order to add those species to the original list. When they are excluded, the number of the bird species in Turkish bird fauna becomes 454. According to Kiziroğlu (1989 and 1993), this number is 426.

The 502 bird species registered in Turkey have been evaluated in accordance with the Red Data Book criterion. It is observed that the population density of bird species (as of the observation date) have significantly decreased both locally and in general. The species under “Group A” are either inhabitant or summer migrants. That is, they leave the country after they incubated. The species under “Group B” are either winter visitors or transit passengers. The evaluations regarding the species under Group A and Group B within the frame of 2007 Red Data Book categories are as follows:

A.1.0 and B.1.0= The species that are undoubtedly become extinct and have not been\ observed for at least 15 years. **IUCN Ex** (for **Extinct**) concerns species that no one has seen in

the wild for the past 50 years. There is no species in Turkey under this category.

A.1.1 and B.1.1= The domestic species that are extinct in the wild, but continue to their life under unnatural environments such as cages, etc. There are two species under this category in Turkey. They have lost their chance to live in a natural environment. Those species are bald ibis, *Geronticus eremita* and darter *Anhinga melanogaster.* Those species, even though set free, cannot adopt themselves to the natural environment. As a matter of fact, none of the bald ibis species grew in a cage has come back. **IUCN EW: (for extinct in wild)**: Those species that become extinct in the wild, live in environments that are similar to their natural environment or in zoos under the support and protection of human beings. There is no species under this category within Group B.

A.1.2 and B.1.2= The population of those species have considerably decreased in Turkey. They are represented by 1-10 pairs (1-20 individuals). As those species are under the risk of extinction they need strict protection measures all around Turkey. **IUCN CR: (critically endangered)**: Those are critically endangered species in the wild. There are 55 bird species from Nonpassares group and 37 species from Passeres group within category A and 20 species from Nonpassares group and 2 species from Passeres group within category B. The total number of critically endangered bird species is 114.

A.2 and B.2= The number of those species is 11-25 pairs (22-50 individuals). Those species are also endangered species which will face the risk of extinction if the required measures are not taken. **IUCN EN: (endangered)**: The species that face the risk of extinction in the wild are under this classification. There are 32 bird species from Nonpassares group and 65 species from Passeres group within category A and 7 species from Nonpassares group and 2 species from Passeres group within category B. The total number of endangered bird species is 106.

A.3 and B.3= The number of those species is 26-250 pairs (52-500 individuals). The risk of extinction is also high for those species. **IUCN VU: (vulnerable)**: The species that have a high risk of extinction in the wild. There are 36 bird species from

Nonpassares group and 51 species from Passeres group within category A; and 18 species only from Nonpassares group within category B. The total number of vulnerable bird species is 105.

A.3.1 and B.3.1= There has been a decline in the population of those species. The number of those species is 251-500 pairs (502-1000 individuals). However, there is a decline in their population when compared to the previous registrations. **IUCN and ATS D: (declining):** This category covers species whose population decline. There are 16 bird species from Nonpassares group and 8 species from Passeres group within category A; and 4 species from Nonpassares group within category B. The total number of bird species in this category is 28.

A.4 and B.4= The population density of those species declines locally, however they have not faced the risk of extinction yet. The number of those species is 501-5000 pairs (1002-10 000 individuals). **IUCN NT: (near threatened)**: Those species have not been threatened yet, however in near future, they may be considered under VU, EN, D, or CR categories. There are 25 bird species from Nonpassares group and 8 species from Passeres group within category A; and only 7 species from Nonpassares group within category B. The total number of bird species in this category is 40.

A.5 and B.5= Those species have not experienced a risk of extinction or a decline in their population yet. **IUCN LC: least concern**: The least concern, endemic bird species are under this category. There are 20 bird species from Nonpassares group and 9 species from Passeres group within category A; and 4 species from Nonpassares group within category B. The total number of bird species in this category is 33.

A.6 and B.6= The obtained data is either deficient or not enough to evaluate those species properly. **IUCN DD= Data Deficient:** The obtained data is deficient for those species. That is, to evaluate those species, further observations and researches are required. There are 15 bird species from Nonpassares group and 28 species from Passeres group within category A; and 10 species from Nonpassares group and 28 species from Passeres group

within category B. The total number of bird species in this category is 54.

A.7 and B.7= This group includes the species which have not be evaluated under the above mentioned criterion. These are species whose registrations are old and unreliable. As they were randomly observed they were not evaluated with reliable methods. Further and detailed researches and observations are needed for those species. **IUCN NE: not evaluated.** There are 9 bird species from Nonpassares group and 8 species from Passeres group within category A; and 3 species from Nonpassares group within category B. The total number of bird species in this category is 20.

Actually categories A.6-7 and B.6-7 can be considered as artificial groups as species under those categories do not have a population and only randomly observed in Turkey and entered to the "Bird List of Turkey" by chance. The total number of species under those two categories is 74. When this number is excluded from the latest number of bird species of Turkey, 408 bird species will remain. This number is very close to that of Kiziroğlu (426 species) (1989 and 1993).

Key words: Bird species, red data book, Nonpasseres, Passeres, Data Deficient

Poster : P-01

A COMPARATIVE ANALYSIS OF THE PROPAGATION AND ABUNDANCE DYNAMICS OF MELANOCORYPHA CALANDRA AND M. LEUCOPTERA IN THE NORTHERN LOWER-VOLGA REGION

EUGENY ZAVIALOV, VASILY TABACHISHIN, EKATERINA MOSOLOVA

Our field surveys conducted in 1998-2005 in the northern Lower-Volga region have brought in an extensive material which enables the modern distribution of Melanocorypha calandra and M. leucoptera to be objectively analyzed. In particular, a trend of M. calandra expansion within the Saratov region in the first years of the 21 century has been revealed. Now it can be found in all the administrative districts in south and south-east of the Saratov Trans-Volga region. Over the whole Alexandrov Gay district, M. calandra was everywhere inferior to M. leucoptera in abundance in the 2005 reproductive season but, on the whole, its population density had increased by 1.5-2 times in comparison with last years (8.3, 6.5, 7.9, and 12.5 ind. / 10 ha in 2002, 2003, 2004, and 2005, respectively). In 2001-2005, progressive expansion of M. leucoptera was observed. It appeared in its former habitat and advanced west and north by 25-50 km for nesting. In June 2005 within the Alexandrov Gay district M. leucoptera was met practically everywhere with a varying population density (from 5.8 to 28.3 ind. / 10 ha, 13.8±2.73 ind. / 10 ha on the average), though as not long ago as few years M. leucoptera was rarely found, at small places of low-grass steppes and along the Kazakhstan frontier only. Our long-term observations show a regularity of the nesting stereotype and the existence of a species-specific relation of M. leucoptera with certain stacies, namely, plain low-grass steppes. The data presented speak for stable local populations of M. calandra and M. leucoptera on a vast territory of the northern Lower-Volga region. Positive long-term trends in habitat transformations under the influence of macroclimatic trends and anthropogenic effects are supposed.

Key words: Melanocorypha calandra, Melanocorypha leucoptera, population density, expansion, Saratov region.

Poster : P-02

A PRELIMINARY STUDY ON BIO-ECOLOGY OF RED-BACKED SHRIKES (LANIUS COLLURIO) IN NALLIHAN BIRD SANCTUARY (ANKARA)

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In this study some bio-ecological studies were carried out about red-backed shrike (Lanius collurio) in Nallihan Bird Sanctuary in 2006-2007. It has been observed that this species come to study site at the beginning of May and that they prefer this site as their breeding, feeding and sheltering area. It has also been found out that, they mostly use the dense bushes in river-bank of Aladag Creek for nest building purposes. During the breeding season, the quantitative data about the nests and eggs were collected and the breeding success was calculated to be 33% which was affected negatively because of the presence of some predators (mainly some Corvids and rodents) in the area. It was also among the findings that the pairs whose nests, eggs and nestlings were severely destroyed, wouldn't leave the breeding area and that they rebuilt their nest once and/or twice in the same site despite the predation pressure. In order to have more detailed data about the bio-ecology of red-backed shrikes in Turkey, long-term observations are needed.

Key words: Lanius collurio, Site choice, Turkey

Poster : P-03

A STUDY ON ECO-ORNITHOFAUNA OF THE BALIK GÖLÜ AND ITS SURROUNDING (DOGUBAYAZIT- AGRI, TURKEY)

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In the present study the bird species living around the "Balık Gölü",a high mountain lake, and its surrounding were investigated. During the study period, from April 2001 to September 2002, a total of 83 bird species and 2 subspecies from 31 families were observed in the area and these species were classified as follows: 50.5 % resident, 42.3 % migrant, 4.7 % winter visitor and 2.3 % transit migratory species. Besides Balık Gölü is determined as the nesting places of Melanitta fusca.

Key words: Ornithofauna, Velvet Scoter (Melanitta fusca), Balık Gölü, Agrı, Dogubayazit, Turkey.

Poster *:* P-04

A STUDY ON ORNITHOFAUNA OF THE BAHÇESARAY (VAN, TURKEY)

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In the present study the bird species living in Bahçesaray were investigated. Dobinson method was used for the counting of birds. Sixty one species and 1 subspecies belonging to 28 families were identified during approximately 1 years of research period. These species were classified as fallows: 48.3 % resident, 48.4 % migrant species. This study finished at 2002.According to the Red data book status, 1 species is in A.1.2, 7 species are in A.2, 13 species are in A.3, 11 species are in A.4. The rest were identified not to belong any status.

Key words: Van, Bahçesaray, Ornitofauna, Birds

Poster : P-05

AN ATLAS OF BREEDING WATERBIRDS IN GEDIZ DELTA: POPULATION ESTIMATES, DISTRIBUTION AND THREATS

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In 2002, an Atlas mapping of the breeding birds in Gediz Delta in western coast of Turkey was performed. The study area was divided into 305 squares of 1x1 km UTM grids. In each UTM grid, 3 point counts separated at least 300 meters with duration of 10 minutes each were applied. Standard European Bird Census Committee (EBCC) breeding codes were used for quantification. Special field recording forms were designed and UTM coordinates, time of day, habitat types, threats and the bird species that were seen and/or heard were noted along with their breeding codes for each of the points separately. The study was completed for a total of 152.5 hours of bird atlas work. Geographical Information Systems (GIS) mapping and analysis were used for evaluating the results. In a total of 28 waterbird species from 14 Families; Podicipedidae, Pelecanidae, Ardeidae, Ciconiidae, Phoenicopteridae, Anatidae, Rallidae, Haematopodidae, Recurvirostridae, Glareolidae, Charadriidae, Scolopacidae, Laridae, Sternidae were found to breed. A total of 17 waterbird species satisfied IBA breeding criteria. Distribution and relative abundance maps for each bird species were prepared. Population estimates, threats, and some important management suggestions for the delta will be described

Poster : P-06

BIRD RINGING RESULTS FOR THE 2002 - 2006 PERIOD IN THE KIZILIRMAK DELTA

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Ringing results of spring and autumn migration of birds caught in the Kızılırmak Delta, during the 10 migration seasons between 2002 - 2006 are evaluated. 34 364 birds from 117 species were mist netted and handled according to the South-East European Bird Migration Network (SEEN) standards. The average migration beginning, the median and the mean dates of the passage are given. The most numerous five species were Sylvia atricapilla (4445), Phylloscopus trochilus (4348), S. borin (4277), Erithacus rubecula (3145), P. collybita (2872). The fat level and the body mass changes of recaptured birds indicate that the birds use Cernek location as fuelling stations during migration.

Key words: Cernek Ringing Station, Kızılırmak Delta, Bird migration, Ringing results

Poster : P-07

BIRDS AND SECONDARY COMPOUNDS

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Secondary compounds are responsible for our colorful, tasty and odorous word. They play important roles as attractant and repellents in biological communities; therefore, mediate the interaction between living organisms. Birds being members of various communities throughout the world are also affected by the presence of secondary compounds in their habitat. There are not numerous examples explaining that birds' interactions with other species mediated by secondary compounds. In this presentation, we review available examples in bird-secondary compounds subject in order to give insight to researchers.

Key words: Birds, secondary compounds, food choice, community, attractants, repellents

Poster : P-08

BIRDS OF BELGRAD FOREST IN ISTANBUL İSTANBUL-

ZEYNEL ARSLANGÜNDOĞDU

Belgrad Forest has an area of 5408.29 hectares, and is located in the Marmara Region. It is the northern remnant of the old forest belt of Istanbul, which is one of the most important settlement spots of Turkey. The forest is in the Trace part, and covers the zone bounded by the Bosphorus and the Blacksea. Oaks make up 75% of the forest and are the dominating tree species. The forest is among the most important bird zones of Turkey. Although Belgrad Forest is an important bird zone, only a few studies about its birds have been done. The extent and the frequency of the existing observations do not provide adequate knowledge about the research area. The goal of this study is to extend the existing knowledge about the birds of the Belgrad Forest and hence ornithofaunal literature of the country. This study reports the bird species, and population densities of important species in Belgrad Forest. Observations and counting of individual birds have been done on 100 randomly selected observation points. Ten minutes of observation was done monthly on each observation point, for 24 months. Moreover, observations were made and bird trains were observed on the trails between observation points and on selected habitats, in order to assess bird fauna of the forest. The research revealed the existence of 146 bird species out of 41 families within 17 orders, in the Belgrad forest.

Key words: Belgrad Forest, Forest Birds, Point Counts, Population

Poster : P-09

BIRDS OF CAMİLİ (ARTVİN, TURKEY)

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This study was conducted in Camili (Artvin, of North-East Turkey). Breeding and autumn migrating field surveys between March 2003 and October 2003 were performed in order to determine breeding statutes and transit bird species of Camili. The study area was divided into four different sub–regions. In these sub-regions, timed-species counts (TSCs) were made to determine species abundance. The Margalef index and the cluster analysis were also used to determine species richness and similarity between sub-regions. In total, 49 bird species were recorded. The most abundant breeding bird species in the study area were determined as redstart (Phoenicurus phoenicurus), blackbird (Turdus merula), blackcap (Sylvia atricapilla), coal tit (Parus ater), great tit (Parus major), jay (Garrulus glandarius), and chaffinch (Fringilla coelebs). Moreover, it was found out that the area was probably used by a total 38 actual and/or possible bird species for breeding purposes.

Key words: Bird, Timed-species counts, Species richness, Camili

Poster : P-11

BIRDS OF LAKE KARATAŞ (TURKEY)

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Turkey has an abundance of plant and wildlife species. The reason why is rich in plant and wildlife species is that Turkey is surrounded by four seas (Black, Aegean, Phosphorus and Mediterranean seas), has different climatic, has two important bird routes, is some species gene centre, and has different geographic features etc.Turkey's wetlands have totally 1.000.000 ha. It has approximately different 250 wetlands. Göller Bölgesi has a lot of wetlands, especially Lake Beyşehir, Lake Burdur, Lake Eğirdir and Lake Kovada. One of these lakes is Lake Karataş.In this study conducted during the years of 2001-2002 in Lake Gölcük, 145 bird species of 17 ordo and 43 families were observed. In the search field, 55 residential, 42 summer migratory, 34 winter migratory and 14 transit migratory species were defined. According to IUCN, the International Union for the Conservation of Nature, Phalacrocorax pygmeus and Aythya nyroca are under near threat status and Falco naumanni is vulnerable status. Also, according to Kiziroğlu (1989), all of these species in the lake are classified as 1 in A.1.2, 20 in A.2, 25 in A.3, 27 in A.4, 3 in B.2 and 3 B.3.

Key words: Ornithofauna, Systematic, Birds, Lake Karataş, Lake District Area

Poster : P-12

BIRDS OF POYRAZLAR LAKE

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This study was carried out at and around Lake Poyrazlar between 2001-2003. The lake was formed after the channel of River Sakarya had changed. 154 species belonging to 39 families from 17 ordo were defined during the studies. 65 residentials, 47 summer migrants, 36 winter migrants and 6 transit migrants among the species were recorded.

Key words: Birds, Poyrazlar Lake, Bioecology

Poster : P-13

BREEDING PERFORMANCE OF FERRUGINOUS DUCK AYTHYA NYROCA AT LAKE ZARIVAR, MARIVAN, IRAN

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The reproductive performance of the Ferruginous Duck Aythya nyroca is rarely known in Iran and few data are available on the breeding pattern of this species. During 2007 breeding season, basic characteristics of the Ferruginous Duck breeding ecology were studied at Lake Zarivar, western Iran. The survey was based on three nests we found in this habitat. The nest was monitored from laying. Some important parameters were recorded including laying date, clutch size, nest size and location and egg size. The factors affecting breeding performance also were considered. Some measures are proposed for conservation of this species at Lake Zarivar.

Key words: Ferruginous Duck, Aythya nyroca, Lake Zarivar, Marivan, Iran.

Poster : P-14

CONSERVATION CHALLENGES TO RESTORE THE CAPTIVE-BRED POPULATION OF HOUBARA BUSTARD CHLAMYDOTIS MACQUEENII IN THE WESTERN-CENTRAL PROTECTED AREAS OF SAUDI ARABIA

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The captive-breeding programme of Houbara bustard was started in Saudi Arabia in 1986 to undertake the restoration of native species such as Houbara through a programme of re-introduction, involving the release of captive bred birds in the wild. Two sites were selected for houbara re-introduction i.e., Mahazat as-Sayd and Saja Umm Ar-Rimth protected areas in 1988 and 1998 respectively. Both the areas are fenced fairly level, sandy plain with a few rock outcrops. Captive bred houbara have been released in Mahazat since 1992 by NWRC and those birds have been successfully breeding since then. The nesting season of the houbara at Mahazat recorded from February to May and on an average 20-25 nests are located each year but no nesting recorded in Saja. Houbara are monitored using radio transmitters through aerial tracking technique and also vehicle for terrestrial tracking. Total population of houbara in Mahazat is roughly estimated around 500 birds, using the following: N=(n1+n2+n3+n4+n5)-n6 (n1=released or wild born, radio, regularly monitored/checked; n2=radio tagged missing; n3=wild born chicks not recorded; n4=wild born chicks, recorded but not tagged; n5=immigrants and n6=bird died after release). In Saja only 25 individuals of houbara have been survived since 2001 because most of the birds are predated immediately after the release. Mean annual home was also calculated using Kernel and Convex polygons methods with Range VII software. The minimum density of houbara was also calculated. In order to know the houbara movement or their

migration to other regions, two captive-reared male houbara that were released into the wild and one wild born female were fitted with Platform Transmitter Terminals (PTT). The home range shows that wild-born female has larger movement than two males. More areas need to be selected for reintroduction programme to establish the network of sites to provide easy access to move these birds and mingle with the wild houbara. Some potential sites have been proposed which require more surveys to check the habitat suitability.

Poster : P-15

CONSERVATION STATUS OF THE GLOBALLY THREATENED BIRDS IN THE MOST POTENTIAL HABITATS IN INDIA

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Out of 1225, seventy-three Indian bird species are globally threatened with extinction, of these 9 are listed as Critical (these species have a 50% chance of becoming extinct in the next 10 years. These species include Rhodonessa caryophyllacea, Ophrysia superciliosa, Grus leucogeranus, Rhinoptilus bitorquatus, Heteroglaux blewitti, Gyps bengalensis, Gyps indicus and Gyps tenuirostris), 10 as Endangered (this means that they have a 20% chance of becoming extinct in the next 20 years. These include Ardea insignis, Ciconia boyciana, Leptoptilos dubius, Oxyura leucocephala, Cairina scutulata, Ardeotis nigriceps, Houbaropsis bengalensis, Sypheotides indica, Tringa guttifer, and Garrulax cachinnans), 57 as Vulnerable (this means that they have a 10% chance of becoming extinct in the next 100 years), 1 as Conservation Dependent (Pelecanus crispus, is listed as Conservation dependent this means that the survival of these species is largely dependent on species conservation programmes that are focused on it) and 2 as Data Deficient (Two bird species, Otus alius, and Rallina canningi have been listed as data deficient which means that not enough is known about them to establish whether they are threatened or not). A further 52 are classified as Near Threatened. Large proportions of the rest of the bird species in India are rapidly declining and are in urgent need of conservation action. The conservation of biodiversity and natural resources including birds can be approached by protection of species from direct threats like hunting, through legislation and protection of sites by designating areas as Protected Areas or internationally Important Bird Areas (IBAs). The distribution of globally threatened

species in India are well covered in all the bio-geographic regions that include Ever-green forest in the Northeast India and Western Ghats (two biodiversity hotspots of the world), dry deciduous forests, wetlands, arid and semi-arid habitats, coastal areas, high altitude areas in Himalayas and cold-desert in Ladakh bordering Tibet/China.We have identified 466 important bird areas in India and out of total IBAs 198 are not officially protected areas. These 198 sites are managed by the local communities and we have started awareness programmes and also developed site support groups and organized IBAs and bird monitoring workshops in the country.However, a site-based approach may not be appropriate for widely dispersed bird species. These need a wider landscape approach encompassing involvement of local communities in the conservation of sites and species, and the protection of the wider environment by ensuring sustainable use of natural resources, through regulating economic activities that modify landscapes. Any attempts to conserve threatened birds will only be successful if all of these approaches are followed. This paper discusses the need for designing a conservation strategy crucial for long-term conservation of threatened bird species in India.

Poster : P-16

DEVELOPMENTAL HOMEOSTASIS AND GROWTH OF THE APPENDICULAR SKELETON IN INBRED AND NON-INBRED GREY PARTRIDGE (PERDIX PERDIX)

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In diploid organisms inbreeding results in a reduction of overall heterozygosity in isolated natural or reared populations of limited size. Low levels of heterozygosity in turn could cause reduced biological performance of individuals, such as subobtimal growth and developmental homeostasis, because of increased homozygosity of deleterious alleles at multiple gene loci ("dominance hypothesis") or low frequencies of advatageous heterozygous genotypes at structural gene loci ("overdominance hypothesis"). We studied the effect of full-sibling inbreeding of grey partridge on length growth and development of limb bones under standardized rearing conditions. Bilateral measurements of humerus, ulna, radius, femur, tibiotarsus and tarsometatarsus were compared between 121 non-inbred adults and fully grown first-generation offspring of full-siblings. The first factor resulting from a principal components analysis represented "generalized limb bone length". Individual factor socres were lower in females than in males (p=0.002) and in inbred than in non-inbred birds (p=0.0.022), when accounting for different hatching dates (ANCOVA). However, developmental homeostasis of long bones, which was assessed by the level of fluctuating asymmetry of right and left-side measurements, did not vary between groups. Our rsults indicate a reduced length growth of limb bones already in the first inbred generation but no negative effect on developmental stability
Key words: grey partridge, Perdix, developmental homeostasis, long bones, inbreeding

Poster : P-17

HEAVY METAL CONTAMINATION OF HERON'S FEATHERS (NALLIHAN BİRD SANCTUARY-ANKARA)

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In this study, during 2006 breeding season, little egret (Egretta garzetta), night heron (Nycticorax nycticorax) and grey heron (Ardea cinerea) as "bio-indicator species" have been choosen to find out heavy metal contamination in Nallıhan Bird Sanctuary (Ankara). The feather samples from different body parts of adults and prefledgings herons were collected. (APF: Adult Primary Wing Feather; ASF: Adult Secondary Wing Feather; ACF: Adult Cover Feather; JCF: Juvenile Cover Feather) and accumulation ratios and levels of heavy metals (cadmium: Cd, lead: Pb, copper: Cu and crom: Cr) in feathers were examined. Among the feathers belong to all these heron species, the highest heavy metal contamination was find out in JCF. The highest average residue amount found out in juvenile cover feathers were little egret (Egretta garzetta); 3,70 mg/kg Cd , grey heron (Ardea cinerea); 12,36 mg/kg Pb, little egret (Egretta garzetta) ;12,73 mg/kg Cu and grey heron (Ardea cinerea); 0,1 mg/kg Cr .When assess the findings, concentrations increased in the order: Cr <Cd<Pb<CuAccumulation ratios of Pb and Cu were higher than Cd and Cr. Addditionally metal accumulation ratios in Grey heron feathers and little egret feathers were higher than in night herons feathers

Key words: little egret (Egretta garzetta), night heron (Nycticorax nycticorax), grey heron (Ardea cinerea), bio-indicator species, heavy metals

Poster *:* P-19

INDIVIDUAL DIFFERENCES BETWEEN SONGS OF TURDUS MERULA

MUHARREM KARAKAYA

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BIYOLOJI BÖLÜMÜ ESKIŞEHIR TÜRKİYE

Communication through bird calls can be between individuals of the same species or even across species. Individual birds may be sensitive enough to identify each other through their calls. Calls are sometimes distinctive enough for individual identification even by human researchers in ecological studies. In this study, songs of six individuals of Turdus merula (European Blackbird) were recorded and analyzed on an audio-sonograph via SyrinxPC Sound Analysis Software. Song samples has been obtained from six male blackbirds living in Eskişehir Meşelik Forest. The six song sonograms show great differences. Therefore, this individual differences permitted us among individual males to identify them.

Key words: Turdus merula, song differences, song analysis,Eskişehir Meşelik Forest

Poster : P-20

INDIVIDUAL GROWTH STRATEGIES IN BARN SWALLOW NESTLINGS: GROW WHAT, WHEN?

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Hatching asynchrony is a common phenomenon amongst altricial birds and results in age and size hierarchies within broods. The subsequent asymmetric sibling competition for parentally provided resources has important consequences for offspring development. Maternal deposition of materials can either serve to enhance or mitigate the size and competitive disparities depending on how the evolution of hatching asynchrony is viewed. This paper examines the growth of three morphological characters (body mass, head-bill length and wing length) by individual barn swallow Hirundo rustica nestlings in relation to their hierarchical position within the brood. We found that for each of the morphological characters, later-hatched nestlings had different shape constants to their older siblings, and for wing length, later-hatched nestlings had a different growth constant. However, for each of the morphological characters, later-hatched nestlings were found to attain non-significantly different asymptotic levels at day 14. This suggests that female barn swallows compensate later-hatched nestlings, which may mitigate the negative phenotypic consequences of hatching late in species that adopt a 'brood-survival' strategy.

Key words: hatching asynchrony, barn swallows, growth patterns, morphological characters, brood survival strategy

Poster : P-21

INSECTS IN GREAT BUSTARD NUTRITION AFTER NESTING IN AGROLANDSCAPES OF THE SARATOV

TRANS-VOLGA REGION VASILY TABACHISHIN, EUGENY ZAVIALOV, IRINA TABACHISHINA

Great Bustard (Otis tarda) nutrition was studied by means of analysis of their excrement collected from harvested grain fields in the Saratov Trans-Volga region from 15 August till 25 September, 2002 - 2005. Animal remains were analyzed as minutely as possible (to individual species). 271 excrement samples were treated, each one containing objects of animal origin. The invertebrates eaten by the bustards are represented by 8 orders with Orthoptera to predominate (36.2%). Coleoptera was also met frequently (29.8%). The frequency of Hymenoptera was significantly lower (4.3%). These kinds of feed were basic in terms of eaten animals as well. E.g. of Orthoptera, Calliptamus italicus (47.1%) and Podisma pedestris (41.1%) predominated; of Coleoptera - Curculionidae did with Gleonis pigra (28.6%) and Tanymecus palliatus (50.0%) to be distinguished. It should be noted that in spite of a wide spectrum of the linear dimensions of food components eaten by bustards the most preferable insect prey ranged from 10 to 25 mm. This is obviously due to the predominance of such Orthoptera representatives in the agrocenoses in that period. Thus, in the Saratov Trans-Volga region after nesting the bustards manage to get the most available kinds of feed (the most abundant species of insects for the present instance).

Key words: Otis tarda, nutrition, Saratov region

Poster : P-22

MAIN TRAITS OF THE BREEDING BIOLOGY OF THE BLUE TIT (CYANISTES CAERULEUS) IN AN EAST MEDITERRANEAN PINE FOREST.

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The breeding biology of the Blue tit has been studied extensively in most parts of its European range, documenting a large variation in traits among study areas, especially between those located in northern-central and southern Europe. Nevertheless, the great majority of the studies carried out in the southern parts of the continent concentrate almost exclusively on the western coasts of the Mediterranean, in bioclimatic conditions significantly different to those in its eastern parts. We studied the biology of the Blue tit, breeding in nest boxes, in a pine forest located on the island of Lesvos (NE Aegean Sea) over eight breeding seasons. We describe the main breeding traits (laying dates, clutch-size, breeding success etc) of the species, investigate the variation of these variables within and among breeding seasons and discuss our findings in comparison with corresponding data from different geographical areas and habitats.

Key words: Cyanistes caeruleus, Parus, Pinus brutia, Mediterranean, coniferous, reproduction

Poster : P-23

MORPHOMETRICAL COMPARISON OF GREAT TIT PARUS MAJOR IN MASHHAD, NOOR AND HAMEDAN (IRAN)

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In order to survey on morphometrical differences, 40 great tit Parus major were caught during autumn 2001 to spring 2002 from three localities, Vakilabad forest park (Mashhad), Noor forest park (Noor) and Abbasabad gardens in southern slope of Alvand mountain (Hamedan) by mist net and gun. 29 morphometric characteristics among populations have been compared based on univariate and multivariate analyzes by SPSS and Past. Comparing biometric data revealed that, 21 characteristics among three populations show significant differences ($p<0.05$). Final results from statistical analyses show that these populations are different and they are three ecotypes.

Key words: Great tit, Parus major, biometric, Subspecies, Iran

Poster : P-24

NEST SITE CHARACTERISTICS OF KRÜPER'S NUTHATCH SITTA KRUEPERI ON THE ISLAND OF LESVOS, GREECE

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Data on tree characteristics at 71 Krüper's nuthatch Sitta krueperi nest sites were collected in the pine forests of the Island of Lesvos. All nests were located throughout the 2003, 2006 and 2007 breeding periods, with 17, 18 and 36 nests found respectively in each year. Krüper's nuthatch tended to nest in dead standing trees (snags) of Calabrian Pine Pinus brutia, with only a small proportion of nests located in dead branches of living trees. The majority of nesting trees had broken tops, medium to advanced decay and had been dead for a long period. Mean and standard error of diameter at breast height were 35.9 + 1.3 cm, canopy cover 31 + 2.8, tree height 5.7 + 0.3 m and nest height 4.3 + 0.3 m. Nest entrance faced mainly W (22 %), NW (18 %) and N (18 %). Quite a high proportion of the nesting trees (>20%) were infected by the wood rotting fungus Fomes pini. Habitat suitability is discussed with respect to proposals for the management of the forest.

Key words: Krüper's Nuthatch, nest site, snag, Lesvos

Poster : P-25

NEST SITE SELECTION OF STEPPE EAGLE AQUILA NIPALENSIS IN MONGOLIA

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Steppe Eagle (Aquila nipalensis) breeds in the forest, high mountains, and different types of steppes. It is a migratory species in Mongolia. We studied 49 breeding pairs in 1998-2007 during varying conditions of food availability, altitudes and regions of the country. Eagles selected seven different types of substrates - most numerous 91.2% nested on the ground (47.8% in rock column and 32.5% in breaking rocks; ANOVA0.05: $F_{6,48} = 2.29$, $P = 0.00005$), cliffs (8.7%), trees (2.2%) and 8.8% on artificial substrates - car cabin (4.4%), car tire (2.2%) and artificial nest platforms (2.2%). But year did not affect nest site selection (ANOVA0.05: $F_{8,62} = 2.13$, $P = 0.3$). Steppe Eagles are mostly ground nesters because of the abundance of the Brandt's Vole (Lasiopodomys bradntii) in the Mongolian steppe. Breeding pairs prefer to nest in the midst of 20-30m high rocks or rock columns on top or on the side of hills in the center of active colonies of voles. Only one pair occupied a nest platform from among 100 platforms built by our team in 2002. There was no difference between type of site and number of eggs (ANOVA0.05: $F_{6,38} = 2.3$, $P = 0.9$) or number of chicks (ANOVA0.05: $F_{6,32} = 2.4$, $P = 0.8$). In contrast, Saker Falcon (Falco cherrug) and Upland Buzzards (Buteo hemilasius) prefer to nest on roofs of abandoned buildings, cattle shelters, electric pylons, railway bridges and other human-built structures. Average clutch was 1.9 (±0.6 SD, 1- 3, n=43) and number of fledglings 0.89 (±0.8, 0-3, n=37). All nests were located between 1100 - 2500 m ASL. Height of nest location ranged from 0 (ground) to 25 meters (cliffs). Altitude, height of nest location and nest size (nest diameter, depth, and height) did not effect the number of eggs and fledglings.
Key words: Mongolia, steppe eagle, nest site

Poster : P-26

NEW RECORDS FOR WEST TURKEY FROM TITREYENGÖL /MANAVGAT (TURKEY) RINGING STUDY

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In Turkey ringing studies have been started regularly since 2002. In the spring of 2002-2005 and also in the autumn of 2005-2006, birds were captured near the river Manavgat, not far from the coast of the Mediterranean Sea in Turkey. During these seasons with the help of more than 50 volunteers, we caught 55.411 birds in 121 species. During the study tape lures with the songs of 15 species were used except the spring season 2005. Except 2005 our mist nets (108 metres long) were standing in fields along a hedge. In 2005 only 51 metres long mist nets were used. In the year 2003, 2004 (spring) and 2005, 2006 (autumn) we used both additional mist nets (120 metres long) in the field on the other side of the hedge to trap Wagtails and Pipits and a special 'high net' (5 m high and 24 m long) to trap especially Swallows. All the birds banded with a metal ring, on which were written Turkey. As a result, especially new record for Turkey is Blyth's Pipit (Anthus godlewskii). Also Richard's pipit (Anthus richardi), Grasshopper Warbler (Locustella naevia), Blyth's Reed Warbler (Acrocephalus dumetorum) and Paddyfield Warbler (Acrocephalus agricola) are the other new records, which are especially new records for west Turkey.

Key words: New records, migration, ringing, Blyth's pipit, Turkey.

Poster : P-28

OBSERVATIONS ON THE CHAFFINCH (FRINGILLA COELEBS) POPULATION: A SHORT DISCUSSION ON POPULATION FLUCTUATION AND SOME BREEDING FINDINGS

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Chaffinch (Fringilla coelebs) breeds in natural forest areas in Turkey. We performed regular field studies in one of the breeding areas, which is in Çamlıdere (Ankara), to show population fluctuation. According to our results, chaffinch population showed fluctuation ($X2=85.96$, $p<0.005$) in the study period. However, there was no significant difference between the seasons about individual numbers ($X2=3.409$, $p>0.05$). During the breeding season in 2007, timed-species counts (TSCs) were also performed to show the most abundant bird species in the chaffinch breeding area. According to the result of TSCs, chaffinch can be evaluated as the most common bird species in bird communities in the study area. Moreover, we also performed some observations about breeding activity of chaffinch. The insights of these findings are also showed and discussed here.

Key words: Chaffinch, population fluctuation, timed-species counts, Çamlıdere, Ankara

Poster : P-29

OBSERVATIONS ON THE DENSITY OF A GREENFINCH POPULATION DURING A 12 MONTHS PERIOD.

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In this study, the data acquired about the fluctuations in a greenfinch population during regular observations in Çamkoru (Ankara – Kızılcahamam) has been evaluated. Study area has been visited 42 times in a 12 months period. Transect and time limited census techniques have been used to evaluate the population density. To estimate the population fluctuations during a period of a year, chi-square test has been used following the calculation of monthly averages. During determination of potential differences between seasons, differences between monthly averages have been calculated with non-parametric Kruskall Wallis Test. According to the results, individual numbers recorded in January, February, August and September showed difference than the other months ($X2=19,75$, $p<0.05$). Increase with October has been reached its top level in october during winter period. Again a decrease has been observed following the end of this month. Spring increase was started with April 'till May which includes the top level of individual numbers. According to test results, any significant difference between seasons by means of population density couldn't be found ($p>0.05$).

Key words: Greenfinch, population density, Çamlıdere, Ankara

Poster *:* P-30

OFFSPRING SEX RATIO AND GROWTH RATE IN RELATION TO PARENTAL AND EXTRA-PAIR MALE QUALITY IN BEARDED TITS PANURUS BIARMICUS.

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Intrinsic genetic quality of a females copulation partners or the interaction between female and male genes, or differential allocation of maternal investment in offspring are known to be important determinants for offspring fitness. Sex allocation theory predicts that females should modify their brood sex ratio in response to differential benefits when increasing maternal investment into sons or daughters. Differential allocation into either sex should occur i.e. in direct relation to maternal condition or in relation to attractiveness or quality of their mate or extra-pair mates. In this study we examine whether intrinsic quality of the mother, attractiveness or intrinsic quality of the social mate or extra-pair mate affects offspring sex ratio and growth rate of the socially monogamous bearded tit Panurus biarmicus. We found evidence that female intrinsic quality influences the proportion of sons produce per brood. However quality or attractiveness of the social mate had no significant affect on sex ratio or nestling growth. Also sex ratio of extra-pair chicks did not deviate from an equal distribution. However, nestlings fathered by extra-pair males developed significantly better than their putative siblings.

Key words: Sexual selection, evolution, mate choice, maternal effects, chick development, sex ratio modification

Poster *:* P-31

OFFSPRING SEX RATIO IN DUCKS

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There is growing evidence that offspring sex ratio in some bird species differs from equality, in spite of the fact that birds have chromosomal sex determination. Most ducks have a male-biased adult sex ratio, but the causes of this disparity are not well understood. The location of the study was Krotovaya Lyaga Lake, Western Siberia, Russia (53,72 N; 78,02 E), where a long-term study of breeding ecology has been carried out since 1970. We determined the sex of 1555 one-day-old ducklings of Mallards (Anas platyrhynchos), 1258 - Common Pochards (Aythya ferina), and 2145 - Tufted Ducks (Aythya fuligula) by cloacal examination between 1986 and 1988, and between 1995 and 2005. There were no significant differences between male and female ducklings in size and weight. Offspring sex ratio of Mallards and Tufted Ducks was not significantly different from unity, but the proportion of males in Common Pochards was 0.534, which had statistical significance. The sex ratio was independent of clutch size, and hatching date. Significant variation in the sex ratios among years was not found, but the proportion of sons increased with increasing nest numbers in all three species.

Key words: Sex ratio; the proportion of sons; Mallard; Common Pochard; Tufted Duck.

Poster : P-32

ONTOGENY OF AUDITORY SENSITIVITY IN NORMAL AND VISUALLY-DEPRIVED PIED FLYCATCHER (FICEDULA HYPOLEUCA) NESTLINGS - RELATION WITH BEHAVIORAL DEVELOPMENT.

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The first clearly identifiable behavior pattern in pied flycatcher nestlings - feeding behavior - is elicited, during the first several days of nest life, by parental food call with energy maximum at about 2 kHz or by tone pips of appropriate frequencies. Ontogenetically next pattern - defense behavior - at the first stage of its development is also triggered by acoustic stimuli - by parental alarm calls with energy maximum at about 5 kHz. Experiments proved that, starting on posthatching day 9, vision became a necessary factor of normal defense response realization. Auditory evoked potentials (AEP) from nidopallidum field L (higher avian integrative auditory structure) were recorded in awake nestlings freely moving in artificial nest that ensured constant body temperature. AEP were studied with reference to behavioral role played by different sound frequencies. Both in normal and deprived groups, nestlings were studied at the age of 6-9 days. AEP thresholds in deprived 6-day-old nestlings were significantly lower than those in the control young in the range of 1-3 kHz; by day 9 the range of lower thresholds expanded into the higher frequencies - up to 1-6 kHz. In other words, AEP thresholds decrease was observed in visually deprived nestlings during the periods when visual afferentation began to play the new role in feeding behavior. Thresholds decrease in the high-frequency range of species-typical alarm call was observed at the time when vision became included into defense behavior. However, the study of the dynamics of threshold decrease in visually-deprived nestlings demonstrated that their AEP thresholds decreased evenly throughout the hearing

range, while in the control young a rapid decrease in the high-frequency range of alarm call was observed.Supported by the Russian Foundation for Basic Research, Grant # 07-04-01022

Key words: ontogeny, behavior, auditory evoked potentials, visual deprivation

Poster *:* P-33

ONTOGENY OF AUDITORY-INDUCED FREEZING IN ALTRICIAL PIED FLYCATCHER (FICEDULA HYPOLEUCA) NESTLINGS AS AFFECTED BY VISUAL AFFERENATION.

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Ontogeny of defense behavior in control and visually-deprived pied flycatcher (Ficedula hypoleuca) nestlngs was studied in their natural nests in the wild. Freezing was observed on the first posthatching days in response to rhythmic acoustic signals. However, in the control young, the efficiency of alarm call (suppression of begging by alarm calling of adults) started to increase rapidly only on posthatching day 9. Visually deprived nestlings do not demonstrate this stage of rapid efficiency growth. It was found that exactly on day 9 the mature photoreceptors were found in the central retinal region - the projection of peripheral visual field. Lack of an adequate visual afferentation prevents the deprived nestlings from distinguishing alarm call from other rhythmic sounds (all signals suppressed begging with comparable efficiency), even if the former suppressed begging effectively enough. It is suggested that the involvement of acoustic signals within the range of alarm call into defense behavior is related with

the abrupt decrease of auditory thresholds within this range. In visually-deprived nestlings such decrease was not observed. Specific freezing posture that was formed in control nestlings by day 11 of nest life was never detected in the deprived young. Supported by the Russian Foundation for Basic Research, Grant # 07-04-01022

Key words: ontogeny, defense behavior, visual and auditory development

Poster *:* P-34

ORNITHOFAUNA OF ESKİŞEHİR OSMANGAZİ UNIVERSITY CAMPUS FOREST

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BIYOLOJI BÖLÜMÜ ESKIŞEHIR

Eskişehir Meşelik Forest are a resforested area in 1940's.This study has been carried to deternine the ornithofauna of Meşelik Forest Area and its around surrounding area. In this study, 49 species determined that belong to 21 families from 6 orders. 31 of this observed species are native, 11 of them immigrant, 1 of them visitor, 3 of them visitor or immigrant, 2 of them native or winter visitor, 3 of them immigrant or winter visitor.

Key words: Ornithofauna, Aves, Eskişehir, Meşelik Forest Area

Poster : P-35

PHOTOGRAPHIC PRESENTATION OF ORNITHOLOGICAL RECORDS

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Nature potography has evolved to a scientific research tool over the recent past. This has been an invaluable tool to study birds and keep records of the status of various species. I have been applying this tool in Pakistan. My presentation will focus on the value of photography and its role in birds conservation.

Key words: Pakistan, birds, nature potography

Poster : P-36

POPULATION ISOLATION EVIDENCE FOR HOUSE SPARROW (PASSER DOMESTICUS) IN THE NORTH OF IRAN

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In spring 2007, to exploit 31 domestic sparrow samples in 700 km distance of two northern cities in Iran, one of them is Bojnourd, it has dry and cold climate with 1100 m elevation. The other one is Nour, it is located at southern of the Caspian Sea with hyrcanian climate. The objective of this study is determining of population differences rate among the individual of this species. Morphometric characteristics are measured exceeds of 28 samples. Morphomeristic characteristics are divided in two kinds: Firstly primaries and secondaries feathers. It should attended to it's color of body and speckle. Statistic analysis has shown the differences of

8 characteristics between measures via in depended sample T test (P Value ≤ 0.05). There is some evidence about house sparrow's separation that is confirmed by PCA test. In comparison with the other passeriformes, the trend of population separation occurs in a long distance. Also, all specimens in east of Iran have bigger total averages versus west, each of significant and non significant difference in mean.In eastern developed sample, the light head of primaries feathers covered in length %65.Primitive hypothesis for population's isolation and racial study of house sparrow can be performing in humid and dry ecosystems.
Key words: Passer domesticus, Population isolation, Caspian Sea, Iran

Poster *:* P-37

PREDATION ON WOODEN NESTBOXES USED FOR BREEDING OF CYANISTES CAERULEUS AND PARUS MAJOR IN A PINUS BRUTIA FOREST ON LESVOS ISLAND

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Great tit (Parus major) and Blue tit (Cyanistes caeruleus) are two bird species found in various habitats within Europe and have been extensively studied due to the fact that they willingly occupy nest boxes. Nevertheless, data concerning their breeding biology in the Southeast Europe are rather limited, especially when breeding in coniferous forest, a habitat considered subordinate for both species. We studied the breeding biology of the Great and the Blue tit, occupying nest boxes in a pine forest (Pinus brutia) on the island of Lesbos- N Aegean Sea. We present the results concerning the predation as recorded during several breeding periods (1999-2002) and we investigate and discuss the influence of factors such as the number of nestlings present in the nest and the time within the breeding season on the recorded predation pressure.
Key words: predation, nest-boxes, Cyanistes caeruleus, Parus major, Pinus brutia

Poster : P-38

PRINCIPAL COMPONENTS ANALYSIS (PCA) RESULT FOR HOUSE SPARROW (PASSER DOMESTICUS) CLINE

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In order to survey on morphometrical differences and cline hypothesis for house sparrow(Passer domesticus), 54 specimens were caught during February to May 2007 from three localities situated in a line being parallel with Alborz mountains in north of Iran. Two plains near the Caspian Sea and a plateau in Khorasan. All birds were hunted by gun.28 morphometric characters among three populations have been compared based on univariate and multivariate analyses using SPSS and Past. Comparing biometric and morphologic data revealed that between 4 to 9 characters among three populations show significant differences ($p<0.05$ and $p<0.01$). Final results from statistical analyses show that the central population with larger characteristics is more different than both ends. Principal components analysis (PCA) can not show a strong gradient for morphometric data. As a result, populations have shown some different in color, skull and bone measures and external sizes too. Perhaps it can to give reasons for primitive three ecotypes at least in 700 kilometers in the north of Iran.

Key words: Passer domesticus, Cline, Ecotype, Iran

Poster : P-40

RECONSTRUCTION OF THE POSTGLACIAL COLONISATION OF PRESENT EUROPEAN AREA BY THE PADDYFIELD WARBLER (ACROCEPHALUS AGRICOLA) - ORIENTATION BEHAVIOR, AVIAN MALARIA AND GENETIC VARIABILITY OF THE POPULATION

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A portion of the mitochondrial control region (456 bp) was sequenced in 104 Paddyfield Warblers sampled in 3 breeding populations in Bulgaria, Russia and Kazakhstan. There was little evidence of divergence between Bulgarian and Russian populations (Fst: -0.0024) whereas the samples from Kazakhstan differed significantly from the European breeding populations (Fst: 0.033 Russian/Kazakhstan and 0.046 Bulgarian/Kazakhstan). The degree of microsatellite differentiation was weaker than was the case for the mtDNA data, which may be explained by differences in effective long-term population size and/or in the mutation-drift equilibrium for these two types of markers. The overall prevalence of haemosporidian parasites was 28%. The most common haemosporidian infection in the breeding Bulgarian population was a new lineage of Haemoproteus described for the first time in the present study. The lack of Plasmodium infections in the Kazakhstan population and abundance of these parasites in Russian and Bulgarian birds indicate different wintering sites and migratory routes of the populations.The specific orientation behavior of Bulgarian birds indicate circumvention of the Black Sea coast following the former expansion of the breeding grounds to Europe. The Bulgarian and Russian populations expanded recently in the present territories. The Kazak Paddyfield Warblers in contrast to the

previous two populations have deep roots indicating long history of the population in the present breeding grounds.

Key words: Paddyfield warbler, orientation, mitochondrial DNA, microsatellite, malarian parasites

Poster *:* P-41

RESULTS OF BIRD BANDING IN SPRING SINCE 2002 AT TITREYENGOL, MANAVGAT TURKEY

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In Turkey ringing studies have been started regularly since 2002. In the spring of 2002 (25.3-11.5), 2003 (23.3-11.5), 2004 (19.3-12.5) and 2005 (03.4-03.5), birds were captured near the river Manavgat, not far from the coast of the Mediterranean Sea in Turkey. During these seasons with the help of more than 50 volunteers, we caught 43.236 birds in 120 species. At the first three seasons the tape lures with the songs of 15 species were used and the last season (2005) it wasn't used to compare both situations. Except 2005 our mist nets (108 metres long) were standing in fields along a hedge. In 2005 only 51 metres long mist nets were used. In the year 2003 and 2004 we used additional mist nets (120 metres long) in the field on the other side of the hedge to trap Wagtails and Pipits. Also in the year 2003 and 2004 a special 'high net' (5 metres high and 24 metres long) were added to trap especially Swallows. Measurements of most of the birds were taken and looked at the moult of rare species. All the birds banded with a metal ring, on which were written Turkey. Further, the total of traps from all species were shown and the importance of Turkey on bird-migration appear. We study to continue our researchs about bird migration. Also dates of re-traps and from 63 foreign re-traps were shown.

Key words: Ringing, Titreyengöl, retrap, migration

Poster : P-43

THE AFFECTS OF THREATS TO THE SULTAN MARSHES ON WATERFOWLS

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The Sultan Marshes is one of the most important wetlands in Turkey because of its biodiversity. It is known that it has great importance for many living creatures especially for waterfowls. The fact that salt and fresh water systems, marsh and steppe ecosystems coexist here is the most important reason why the Sultan Marshes can support such a tremendous biodiversity. Because of it is located on main migration route, the Sultan Marshes form suitable resting and breeding grounds for a lot of bird species. In 1994 it was declared as one of Turkey's first five protected site under Ramsar Convention. For many years, it has been known that The Sultan Marshes is the second most popular bird paradise with its richness of bird fauna in Turkey. Although the Sultan Marshes is one of the best protected sites in Turkey, there are still many problems as uncontrolled cutting and burning of rushes, illegal hunting and interference of ecosystem's water regime. Because of these problems, many kind of bird species that had known to breeding in this area in the past had to leave the area. This study was carried out to determine the factors that threat the Sultan Marshes and waterfowls living there. Affects of international and national protection measures were investigated.

Key words: The Sultan Marshes,waterfowl,biodiversity

Poster : P-44

THE BREEDING BIOLOGY OF MAGPIE PICA PICA URBAN POPULATION (ZIELONA GÓRA, POLAND)

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Magpie breeding pair density in the city of the Zielona Góra, W Poland, is one of the highest in Eurasia. We studied the breeding biology this urban population. This study was carried out between 1998-2001 and 2003-2005 y. We observed 114 clutch sizes. The first eggs for each year of magpies was between 15th March-28th March. The average date of clutch start was in period 31st March-6th April.The average clutch size was 6.26 eggs (min. 3 - max. 8). The breeding success was 3.5 young per successful pair and 1.6 young per pair with just a clutch. This was higher than in other Eurasian non-urban populations.

Poster : P-45

THE DISTRIBUTION OF BLOOD PARASITES IN PASSERIFORM BIRDS IN SOME EUROPEAN AND ASIAN DISTRICTS

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Birds are the only group of vertebrates, which is inhabited almost worldwide by blood parasites. There is no information about distribution of the haematozoa in birds belonging to the Passeriformes in vast territories of Asia. Our objective was to obtain first information on this subject from some places in Asia and to compare with data from Europe.In Asia material was collected at two sites in Yekaterinburg district on the European slip of the Ural Mountains and at one site in Irkutsk district near the Baikal Lake in 2004. In Europe material was collected in Curonian Spit, Russia in 2004-2005. In all, 650 individual passeriform birds belonging to 9 families and 15 species were investigated. During this study, we combined both microscopy and PCR-based methods to detect infections of the haematozoa. Blood parasites were common at each study site. The overall prevalence of infection in Asian districts was 63% and in Curonian Spit, northern Europe 28%. Parasites of Haemoproteus spp., Leucocytozoon spp., Plasmodium spp., Trypanosoma spp., Hepatozoon spp., and microfilaria were recorded. The majority of infections were identified to species level. Twenty five mitochondrial cytochrome b gene lineages of Plasmodium and Haemoproteus genus were identified.Due to high prevalence and diversity of avian blood parasites in Asia, this territory can be convenient study site for future investigations of the haematozoa and their relationships with birds.
Key words: avian blood parasites, haematozoa, Russia, prevalence

Poster : P-46

THE PASSERINES MIGRATION ON THE SARAMATIC-MARITIM AND PONTIC ROUTES IN DOBROGEA (EAST OF ROMANIA)

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In east of Dobrogea (Danube Delta Biosphere Reservation), in spring are following migration routes: Est-Elbic, Pontic şi Sarmatic, and during the autumn the birds populations come from North, East and evenly from Central Europe on the routes: Est - Elbic, Pontic, Sarmatic and Carpathian. The principal migration routes for passerines, Sarmatic- Maritim and Pontic are discussed.For monitoring birds passerines we established two stationeries: North and South of Danube Delta Biosphere Reservation. The first one was on Wolf Ground, in South, and second one on Letea Ground in the North. The observations were collected between 2002-2007. In all observations zones were installed ornithological mist nets for capturing passerines, so that we could make an analyze of the passerines avifauna in accordance with habitats diversity. Also we made transects by 10 km for quantifying abundance and qualitative avifauna of passerines birds.In autumn migration were observed 88 passerines species. During the spring migration the number of passerines species was significantly smaller (35 species) because the birds spread out horizontally on big rest and feeding surfaces for recovering the energetic reserves in shorter time, so that the breeding season to begin quicker. The passerine passage during spring is relatively short and stop over periods are shorter than in autumn. The autumn passage is longer than in spring, and the routes are narrower.The presence of some passerines species in spring and absence in autumn is as well discussed. Some passerines species doesn't use the same migration route when they return towards winter ranges in autumn passage. Also there are passerines which fly on same route in spring as well in autumn.

Concerning passerines diversity for the studied zones, we observed that the highest diversity is in those areas which present the biggest diversity of habitats and in which food disponibilities are greater. As well, the meteorological condition in Dobrogea and the food disponibilities influence very much passerine migration, determining duration of stop over periods.Danube Delta Biosphere Reservation has excellent places for rest and feeding for migratory passerines or for those who breed. In future is necessary to continue the studies concerning dynamics and distribution of passerines during passage for elaborate some efficient protect measures.

Key words: passerines, migration, diversity

Poster *:* P-47

THE PROBLEM OF THE CORMORANT (PHALACROCORAX CARBO) IN AZOVE-BLACK SEAS REGION

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The Cormorant before 1946 did not bred on islands in the Bays of Black Sea and in Dnieper Delta. On the Mute Swans Islands in Karkinitsky Bay first nests were recorded only in 1976. In Dnieper Delta 18 nests were found in 1946 on Sokoliny islands near the ichthyological Reserve “Red Cottage”. This colony was increase and at the beside situated Bakaj islands. Here nest population was annual markedly increase. Cormorant has breeding in polyspecific colony of Ciconiiformes o the most high Black poplar till 20-22m. Maximum number was registered in first half of 70s about 5000 breeding pairs. Hower from end 70s – beginning of 80s the workers of ichtiological Reserve hade organized the struggle with Cormorant. They hade shoot it’s near the nests in April and as the result to end 80s practical all numerous polyspecific colony was dispersed. The first left the colony Squacco Heron (Ardeola

ralloide) and Glossy Ibis (Plegadis falcinellus), later left Little Egret (Egretta garzetta) and Night Heron (Nycticorax nycticorax). Grey Heron (Ardea cinerea) moves in the reeds, where bred with Greate white Egret (Egretta alba). Cormorant transforms in land breeding species – it becomes the common occupants of the islands without trees in Bays of the Black Sea. Its first land nests was observed in 1989 on Konsky islands in Yagorlitsky Bay, but today Cormorant is breeding on islands in the Tendra and Dzharilgachsky Bays. Its expansion is registered all over the Azov-Black Seas region. Their population continues growing, displacing native species. It is one of reason of such sharp decline of the Mediterranean Gull (Larus melanocephalus) population, which was early the most numerous species on islands of Black Sea Biosphere Reserve. Cormorants destroying islands coastline tear out many reed for build his nest. In the Azov region where colonies Cormorant are on the trees, the tree plantations are dry and may ruin. The native people – most fisherman's, see in it food competitor and destroyed colonies in April, when the nesting are already great. This is very large factor anxiety for all other breeding species. Also, the problem o cormorant in Azov-Black Seas region is very actuality and need the solve.

Poster : P-48

THE REPRODUCTION BIOLOGY OF NYCTICORAX NYCTICORAX (LINNAUES, 1758) BLACK- CROWNED NIGHT HERON AT LAKE POYRAZLAR (SAKARYA-TURKEY)

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Lake Poyrazlar located in the northeast of Turkey is an important reproduction area for Nycticorax nycticorax black-crowned night heron. The research was carried out between March-December 2005. The adult individuals arriving in this area as of the beginning of April, migrate to the South in November after bringing up the chicks. The area in which 130 mates incubate, constitutes %0.6-1 of the lake. Nesting area in the lake is 4000 m2. It was found out that the first eggs of about 31.02 gr hatch at the end of a three-weeks period (21-22 days). Negative anthropogical effects were not observed in the lake. However, it is vital to take precautions for breeding species in order for them to continue their existance in the future.

Key words: Black-crowned Night Heron, Nycticorax nycticorax, Reproduction, Poyrazlar Lake, Birds, Turkey.

Poster : P-49

THE STATUS OF THE BIRDS OF IRAN

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Iran is a vast country, measuring 1,648,500 square Kilometers, with a population of about 70,000,000, a little smaller than Saudi Arabia (or three the size of France) but, much larger than Kuwait, Syria, Jordan, Iraq, Bahrain, Qatar, United Arab Emirates, Yemen, Lebanon, Azerbaijan, Armenia, and Georgia all combined. Over half of Iran is mountainous, and extended between the Caspian Sea to the north and the Persian Gulf at the southern boundaries. The Plateau for the most parts characterized by vast and dry deserts, and one of the most fearful desert of the world lies in this plateau. Iran's size, its situation in the Pale-arctic faunal region, extremes of climate and a variety of Geographical Features,as it sits at the junction of four major geological regions, namely the Iranian-Turanian, Euro-Siberian, Saharo-Arabian and Sudanian, have endowed the country with a wealth of flora and fauna unequalled in other part of the Middle East.More than %70 of Iran is under severe drought, and as the wetlands and the fertile plains of Iran are situated in the desertic climate of western Middle East, therefore, they are very important for many species of migrant water-birds, specially for 22 species of birds listed as globally threatened in the 2006 IUCN list of threatened animals. A population of 5000,000 to 6000,000 water-birds are migrating to Iran every year.

Poster : P-50

WEB-BASED MONITORING SYSTEM FOR SPACIOUS MOVING BIRDS - A CASE STUDY IN THE BEARDED VULTURE (GYPAETUS BARBATUS)

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Immature bearded vultures roam areas up to 20.000km². Monitoring them successfully needs international standards. We developed a monitoring system based on uniform data standards without spatial constraints. It allows following up of birds with spacious ranges. Based on a WEB-2 application an online database for the assessment and management of all relevant information was ordered from the "Foundation for the Conservation of the Bearded Vulture" (FCBV) within the "European Bearded Vulture Reintroduction Program". The database (a pure web-application compatible with all common browsers) can only be accessed by authorized users with valid password. The program provides high usability and intuitive handling and supports fast access to large, complex amounts of data by using up to date techniques like AJAX. For data retrieval this application is embedded in a public available homepage (www.gyp-monitoring.com). Different services are offered (from read only to specific download access) depending on different user license. For the management of identifiable individuals 200 input fields can be used optionally. Up to now the database consists of nearly 40.000 records mostly based on direct observation or telemetry data. Additionally, simple query options and geographical data visualization are provided. The system is designed multilingual and adaptable to other species.
Key words: Gypaetus barbatus, bearded vulture, monitoring system, online data base

Poster : P-51

WINTERING AREAS OF THE BLACK KITE (MILVUS MIGRANS) IN SOUTH-EASTERN ANATOLIA

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During the ornithological trips in winter 2003 to 2007 it has been determined that Black kite (Mivus migrans) occurs as large and stationary groups in several areas of South-eastern Turkey. Information on numbers of individuals in observed groups, habitat properties of the areas, and feeding possibilities has been given. Proposed measures for conservation of the populations of the species, which regularly wintering in Turkey have been discussed, as well.

Key words: Black Kite, Milvus migrans, South-eastern Anatolia, Wintering areas

Poster : P-52

EPIZOOTOLOGICAL, EPIDEMIOLOGICAL FEATURES OF BIRDS' FLU AND ECOLOGICAL ASPECTS.

ELDAR HUSEYINOV MURTUZ

AZERBAIJAN GANJA GULISTAN 15/16

Birds' flu is a zooanthroponosis disease,it attains both epizootology and epidemiology.Pathogenic area of disease creating virus is very wide.Before poultry,afterwards different kind of animals and humans are infected with this disease,its death percent is highly(80-100%).The main reserve of the virus is water planktons,first of all the fishes and other wateranimals feeding on these water planktons,afterwards the water birds feeding on these fishes and water animals,other birds,animals and humans feed on these water birds are infected with this disease. The key source of the infection is the dead fleshes of the birds.Breaking of the ecological balance and formation of unbalance(global climatechangeability,damaging of the ozone,hotbed efficiency,acidity rains,desertification,deforestation,soil erosion and degradation and so on)create new variants and procreate a serious obstacle to carry out struggle against the disease by influencing the pathogenic of virus.

Key words: Epizootology, epidemiology

Poster : P-53

MIXED INFECTIONS WITH BLOOD PARASITES INDUCES A TERMINAL INVESTMENT IN NATURAL POPULATIONS OF BIRDS.

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The terminal investment hypothesis predicts that individuals should invest more in their present reproduction if they are less likely to survive to future reproductive events. It has been shown that in natural populations of birds haemosporidian parasites critically increase the rate of mortality. Therefore, the activation of the immune system may cue organisms to the risk of infections that reduce lifespan.Recently is has been demonstrated that infection with multiple strains resulted in higher virulence. Hence to suffer a double infection could be an evidence of reduced lifespan that could lead to induce a terminal investment.We tested this hypothesis on a natural population of house martins (Delichon urbica). We found a reduced survival in double-infected individuals compared to single and uninfected ones. In addition, individuals that fight against different parasites allocated less energy to body condition maintenance and more energy used to reproduction, supporting our idea of terminal investment. To the best of our knowledge, this is the first evidence of terminal investment caused by blood parasites on natural population of birds.

Key words: terminal investment, parasitism, mixed infections, reproductive effort, Delichon urbica

Poster : P-54

AN AUTOMATIC STEPWISE LOGISTIC REGRESSION METHOD FOR MODELLING HABITAT SUITABILITY OF KRUEPER'S NUTHATCH IN SOUTH ANATOLIA

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To help understand the habitat preferences of Krueper's Nuthatch (*Sitta krueperi*) in south Anatolia, we investigated the influence of fifteen different variables. Several different statistical methods have been considered to build predictive models based on presence-absence data. One such method is generalized linear models. In order to select the most parsimonious model amongst a set of logistic models for each subset of variables, logistic regression, a particular case of generalized linear regression models, with an automatic stepwise model-selection procedure was used. Logistic regression with six variables as the independent variables was used to develop a model for predicting the probability of occurrence of Krueper's Nuthatch. Species of tree, bottom of canopy of tree, and direction of slope were positively associated with the probability of occurrence whereas thickness of trees in breast height, proportion of trees' cover, gradient of slope were negatively associated as the most parsimonious predictors.

Key words: Krueper's Nuthatch, habitat preferance, logistic regression

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ISBN: 978-9944-0092-0-1
Publishers: Sadrigrafik, 2007 ANTALYA