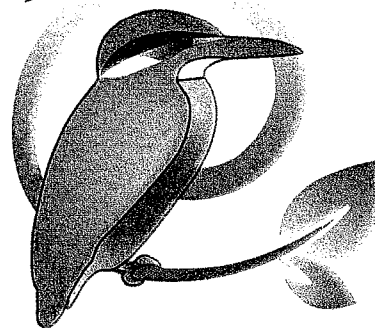
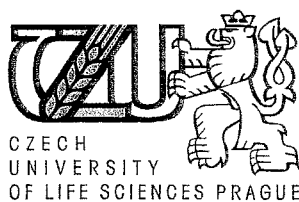


2nd European Congress of Conservation Biology
"Conservation biology and beyond: from science to practice"



ECCB
Prague 2009



Society for Conservation Biology

Prague, Czech Republic, 01 – 05 September 2009

BOOK OF ABSTRACTS

www.eccb2009.org

301. RARE BIRD SPECIES IN NATURAL AND MAN-MADE ECOSYSTEMS IN ST. PETERSBURG: LIMITING FACTORS AND CONSERVATION MEASURES UNDER CONDITIONS OF THE MEGALOPOLIS

Iovchenko, Natalia, St. Petersburg University, Russia

The geographical features of St. Petersburg determine main directions in rare bird species protection: protection of breeding birds; protection of migrating birds on stopover sites. Within the framework of the Russian-Finnish project "GAP-analysis in Northwest Russia", we have carried out field investigations aimed to estimate the modern status of 55 species listed in the Red Data Book of St. Petersburg and to reveal the role of SPAs in the protection of every species. The majority of rare birds inhabit forests (14 species) and wetlands (28 species). Our studies have shown that existing SPAs are not sufficient for protecting rare birds especially on stopover sites. The analysis of the status of rare species on SPAs under design has shown that the majority of rare species found in natural habitats will be protected in the improved SPAs network. 9 species inhabit only or mainly anthropogenic ecosystems and are found in low numbers or not found at all in SPAs. These species are the most vulnerable because of limited area of their natural habitats. Wellbeing of breeding populations of these species largely depends on the area of man-made habitats. We have revealed the key parameters of favourable biotops and elaborated special conservation measures.

303. SUSTAINABLE FOREST MANAGEMENT AND PROTECTION IN LOWER DANUBE FLOODPLAIN

Iovu Adrian, Biris, Forest Research and Management Institute, Romania; Nicolae, Donita, Forest Research and Management Institute, Romania; Mihai, Filat, Forest Research and Management Institute, Romania; Marius, Petrila, Forest Research and Management Institute, Romania; Constantin, Rosu, SC V.R. Ecoconstruct SRL, Romania; Cristina, Munteanu, WWF Danube-Carpathian Programme, Romania

Through the construction of over 1 200 km dikes and the wetland draining works conducted mainly during 1961-1970, the Lower Danube Floodplain landscape was profoundly modified in terms of geographic environment and biocoenosis. Large areas of the remained floodplain forests are profoundly modified due to a large scale use of hybrid poplar and willow clones, to the expansion of exotic tree species, and to intensive forest management practices. Important evolutions have been registered in the last 20 years in terms of management objectives of these forests, because all of them have been included among protective forests and most of them are part of the national work of protected areas and NATURA 2000 pan-European network. All these changes demand a new analysis and approach of forest management in relation with present requirements. In this paper we describe forest management measures for Lower Danube Floodplain aiming to preserve and reconstruct the forest ecosystems types and to ensure a balance among ecological, economic and social functions. The results obtained might be included among technical regulations for the management of floodplain forests.

304. JOINT OPTION VALUES OF ECOSYSTEM SERVICES

Jacobsen, Jette Bredahl, University of Copenhagen, Denmark; Thorsen, Bo Jellesmark, University of Copenhagen, Denmark; Strange, Niels, University of Copenhagen, Denmark

Non-contaminated drinking water may become a scarce resource in the future and the protection of watersheds will play a significant role in ensuring the supply of clean

drinking water as well as biodiversity. This study analysis the decision to convert natural areas into intensive land use and the implications of joint production of ecosystem services when the future values of biodiversity and groundwater protection are uncertain and conversion is irreversible. Usually, the options have been analysed separately. In this study we extend the literature by modelling additive options of ecosystem services, the question of whether to continue timber production in a forest or set up a reserve securing biodiversity and groundwater when these two latter are uncertain. The problem is solved numerically using dynamic programming for various drift parameters, variances and co-variances. It is concluded that conventional expected net present value analysis which treats conversion as a 'now or never' decision, may not lead to an optimal decision rule. It is shown how the option to postpone conversion and acquire new information should be included. An additive option value approach shows that the optimal decision strategy is more conservative when the option to postpone is recognised.

305. A CONSERVATION PHYSIOLOGY LESSON FOR GREEN-TREE RETENTION: SURVIVAL OF EPIPHYTIC LICHENS REQUIRES THEIR COMPLEX ACCLIMATIZATION

Jairus, Kadi, University of Tartu, Estonia; Lõhmus, Asko, University of Tartu, Estonia; Lõhmus, Piret, University of Tartu, Estonia

Retaining of large live trees in timber-harvesting areas has been suggested to effectively support epiphytic lichen species in managed forests. However, a general and long-term perspective requires an integrated physiological understanding of the mechanism of how lichens resist the logging stress. We continued a study reporting high short-term survival of lichens on retention trees, and described changes in the individual condition of the thalli. Nine epiphytic taxa of various life-forms were sampled from birch and aspen in retention cuts 5 years post harvest and in adjacent forests. In laboratory, chlorophyll fluorescence parameter Fv/Fm, thickness of the upper cortex, photobiont to mycobiont ratio and the relative area of fruit-bodies were measured. A common pattern, broadly consistent among species, was found: while suffering from photoinhibition (indicated by low Fv/Fm values), the lichens had acclimatized to the open conditions in a few years by thickening the upper cortex and increasing the investment to sexual reproduction. The study highlights the value of physiological framework for conservation management by pointing out that (1) lichen survival is high-irradiation limited and heavily dependent on phenotypic plasticity; (2) a thin upper cortex may indicate the most sensitive species.

306. AVIAN POPULATION DYNAMICS AND HUMAN INDUCED CHANGE IN AN URBAN ENVIRONMENT

JAMES, Philip, Urban Nature, School of Environment and Life Sciences, University of Salford, Salford, M5 4WT, United Kingdom; NORMAN, David, Cheshire and Wirral Ornithological Society, c/o Rowswood, Ridding Lane, Runcorn Cheshire WA7 6PF, United Kingdom; CLARKE, Jeff, Halton Borough Council, Landscape Services, Picow Farm Road Depot, Picow Farm Road, Runcorn, Cheshire, WA7 4UB, United Kingdom

The predominantly urban boroughs of Halton and Warrington straddle the river Mersey in northwest England. Since the 1970s there has been a major change in land-use associated with both innovative town design and the decline of manufacturing and chemical industries in the boroughs. Also, co-ordinated programmes have directly addressed water quality issues. The breeding birds of the two boroughs were surveyed in 1978-84 and 2004-06 as part of the bird atlases of Cheshire and Wirral, based on tetrads (2x2 km squares). The 77 tetrads in Halton and Warrington held 114 species breeding in one or both atlas periods, of which 62 had expanded or maintained

their range in the twenty years between the two surveys, while 52 were found in fewer tetrads. Most waterbirds (grebes, ducks, geese, Kingfisher and Grey Wagtail) have increased, as have many insectivores (including warblers and tits). Many woodland species are more widespread, as are most raptors, but breeding waders and most farmland birds have declined. We interpret these results in relation to improved quality of water and air following tightened regulation of emissions and the decline of the traditional chemical industry, and changing patterns of land-use in urban greenspace and the peri-urban agricultural environment.

307. ASSESSMENT OF THE POPULATION VIABILITY OF DANUBE STURGEONS IN A VORTEX SIMULATION MODEL

Jaric, Ivan, Institute for Multidisciplinary Research, Serbia; Ebenhard, Torbjorn, Swedish Biodiversity Centre, Swedish University of Agricultural Sciences, Sweden; Lenhardt, Mirjana, Institute for Biological Research, Serbia

Six sturgeon species, which originally inhabited the Danube River and the Black Sea, have experienced severe decline due to a whole spectrum of anthropogenic impacts, such as habitat destruction, over-fishing and water pollution. The risk of their extinction is further enhanced by the lack of efficient management, as well as by the serious lack of knowledge about their life history. Although population viability analysis could represent a valuable tool in addressing such problems, it has not so far been applied to the Danube sturgeon populations. In the present study, the computer simulation model VORTEX was employed to assess population viability of the six sturgeon species in the Danube River basin. Model parameter values were acquired from available literature and through experts on sturgeons in the region. Due to the significant discrepancy in life history parameter estimation among different authors, a sensitivity analysis with a wide range of values was conducted, in order to assess the model sensitivity to different sets of data and to identify the parameters which have the largest influence on the population viability. Scenarios with different harvest levels, stocking dynamics and other policy measures were developed, in order to assess the effect on population persistence and recovery.

308. GENETIC DIVERSITY OF BROWN BEARS (*URSUS ARCTOS*) IN SLOVENIA

Jelencic, Maja, Department of Biology, Biotechnical Faculty, University of Ljubljana, Slovenia; Skbinsek, Tomaz, Department of Biology, Biotechnical Faculty, University of Ljubljana, Slovenia; Waits, Lisette, Laboratory for Conservation and Ecological Genetics, University of Idaho, United States; Trontelj, Peter, Department of Biology, Biotechnical Faculty, University of Ljubljana, Slovenia; Kos, Ivan, Department of Biology, Biotechnical Faculty, University of Ljubljana, Slovenia

Brown bears in Slovenia form the northwestern part of the Dinaric bear population. These animals were the main source for bear reintroductions throughout Western Europe, and are the only possible source for a natural recolonization of the Alps. We evaluated the genetic diversity of this population using 22 microsatellite loci and 487 tissue samples of bears taken from the population between 2003 and 2008. We used three multiplex PCR reactions to obtain multilocus genotypes, and systematically checked for genotyping errors using blind repeats. All 22 loci were highly polymorphic and genetic diversity was relatively high ($A = 7.13$; $H_o = 0.72$; $H_e = 0.74$). 21 of 22 loci were in Hardy-Weinberg equilibrium (Holm-Bonferroni corrected $p < 0.05$). Interestingly, 193 out of 231 pairs of loci were in linkage disequilibrium. Garza-Williamson M ratio indicates a recent population bottleneck ($M = 0.697$, below the critical value for the sample size) that agrees with historical data. This bottleneck is also observed using heterozygosity excess method as implemented in program BOTTLENECK. Although genetic diversity

levels are high compared to other brown bear populations, the observed genetic picture shows some interesting population genetic anomalies that require additional analyses to be fully understood.

309. IT ISN'T EASY BEING GREEN: INVERTEBRATES, PLANTS AND POLLUTION IN URBAN GREEN SPACES

Jones, Elizabeth, Imperial College London, United Kingdom; Leather, Simon, Imperial College London, United Kingdom; Power, Sally, Imperial College London, United Kingdom

This investigation looks at invertebrates, with particular focus on carabids and woodlice, and plants in urban green spaces in Bracknell, Berkshire, UK. The UK population is rising and more people are moving into urban areas. Thus as urbanisation increases urban green spaces may be the last reserves for biodiversity. Monitoring of vehicle emission levels, in urban areas in particular, is vital to allow predictions of change in vehicle pressure. Nitrogen dioxide (NO_2) is used in this investigation as a surrogate for vehicle emissions. NO_2 has been shown to influence plants, plant communities and invertebrates but other factors (including management, site age, fragmentation, surrounding land use and traffic density) also have important impacts. There are also significant differences in numbers and responses to different factors of plants and invertebrates away from the road edge. NO_2 levels commonly exceed critical levels in urban areas and this has important implications for conservation and human health. Urban green spaces clearly make a valid contribution to the ecological value of an area but are constrained by human influences. These results will be used to provide simple management recommendations to Local Authorities to improve and/or optimise green spaces for biodiversity.

310. GRASSLAND DIVERSITY: SPATIAL SCALE PATTERNING AND CONSERVATION MANAGEMENT - A FIELD INVESTIGATION

Jones, Andrew, Fundatia Adept, United Kingdom

A field study at the heart of European grassland biodiversity within Romania, on pastoral landscapes still under low-input traditional farming management is finding high levels of plant species diversity at small, medium and high spatial scales. Measures of diversity at all these spatial scales, a noisy spatial patterning, show declines with increases farm intensification as a restricted range of tolerant species remain under adverse management including fertiliser application and reseeded and sensitive species are lost. As a result, relatively uniform semi-natural grasslands are now the usual situation across many parts of Europe. This paper considers the conservation implications of high spatial diversity in terms of landscape level conservation management and the processes involved in its maintenance including dispersal through livestock movement. It further considers that spatial diversity is not adequately included in conservation valuation systems, in reserve management planning and in the formulation of policy including habitat directive and rural development/agri-environment.

311. HARVEST OF BIOENERGY WOOD AND EFFECTS ON WOOD LIVING INSECTS

Jonsell, Mats Jonsell, Department of Ecology, Swedish University of Agricultural Sciences, Sweden

To substitute fossil fuels, new assortments of wood are harvested as bioenergy, assortments formerly retained in the forest. Hitherto the main source in Scandinavia is logging residues: branches, twigs and tops. The last years the interest has expanded to clear felling stumps. Extraction