Comprehensive conservation in urban environments: An ecological framework for Greater Manchester, UK

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BOOK OF ABSTRACTS

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We present a novel approach that uses ecological heterogeneity in reserve design, taking as a case study Dadia National Park (Greece). We measured six ecological heterogeneity indices (EHI) for thirty sites and tested their predictive value for biodiversity (woody plants, orchids, Orthoptera, amphibians, reptiles, passerines). EHI were strongly correlated with the species richness of woody plants, birds and biodiversity. Two indices, one vertical and one horizontal, predicted best biodiversity (R2=61% and 54% respectively). These indices had also significantly higher values inside five out of the six complementary reserve networks designed for each biological group, than in the remaining sites not included in the respective networks. We compared reserve networks formed by choosing the sites based on this EH approach (network with the greatest vertical and then horizontal diversity indices) with standard species-based approaches (using scoring and complementarity) and with a random selection approach. The EH network was significantly more efficient than the random one and although it was, as expected, less efficient than the species-based networks, this difference was not statistically significant. Our results support the EH method as a novel alternative tool in reserve design, in particular in situations where no biological but accurate mapping data are available

317. REINTRODUCTION OF ENDANGERED GOITERED GAZELLE (*GAZELLA SUBGUTTUROSA*) AND ANATOLIAN MOUFLON (*OVIS GMELINII*) IN TURKEY: A GENETIC EVALUATION

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Having a wide distribution in Anatolia before 20[th] century, the goitered gazelle (*Gazella subgutturosa*) and Anatolian mouflon (*Ovis gmelinii anatolica*) continually declined until today. The conservation of goitered gazelle and Anatolian mouflon started in 1970s by the establishment of captive breeding stations. After successful breeding in these stations, the second phase of conservation was put into practice by implementation of reintroduction programs in 2005. This study aims to quantify the amount of genetic diversity and inbreeding in source (captive bred), reintroduced and wild populations to monitor the conservation program. For the gazelle, 40 microsatellite loci from domestic sheep, goat, cattle and other gazelle species were tested and 20 of these loci were successfully amplified for *Gazella subgutturosa*. Determination of the multilocus genotypes of 100 individuals from two captive-bred and two wild gazelle populations are continuing. The magnitude of genetic difference among source and reintroduced populations of Anatolian mouflon was evaluated by 11 microsatellite loci from 172 individuals. Study populations revealed close results: (mean±S.D) Bozdağ population mean number of alleles (nk) = 2.9091±1.1362, Ho = 0.3830±0.2717, Nallıhan population nk = 2.9091±1.1362, Ho = 0.4086±0.2977, and Karadağ population nk = 2.5455±1.1282, Ho = 0.3388±0.2775. Population differences for major genetic parameters were not significant ($p > 0.05$) by comparisons with paired t-test.

318. COMPREHENSIVE CONSERVATION IN URBAN ENVIRONMENTS: AN ECOLOGICAL FRAMEWORK FOR GREATER MANCHESTER, UK

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Ecological networks, utilising the patch-corridor-matrix concept, are the most widely applied planning tool aiming at conservation of species outside designated sites in human-dominated environments. However, the ambiguous evidence of corridor functionality and the lack of ecological data for species in cities, combined with the relatively high diversity of species in the urban matrix raise questions about the applicability of ecological networks in urban areas. In light of these doubts, different approaches to planning for conservation in cities are worth exploring. This paper presents such an alternative approach developed for Greater Manchester, UK: the Ecological Framework. This Framework is a set of area-specific strategies, applied to both public and private land and based on identification of areas considered the most valuable for biodiversity. These "biodiversity opportunity areas": natural and semi-natural habitats, private gardens and mosaics of habitats were identified with the GIS analysis of land use and land cover. The Ecological Framework has been developed as a result of collaboration between academia and urban planners, thus bridging the gap between science and practice. The strategies for maintenance and enhancement of the Ecological Framework are presented, and threats and opportunities for this approach in the context of spatial planning are presented.

319. THE TRUE ROLE OF PREDATORS IN MAN-MADE ECOSYSTEMS

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Insect predators are often assumed to significantly contribute to the regulation of insect pests in agroecosystems. The generation time ratio hypothesis, however, predicts that long-lived predators should not considerably affect the dynamics of their short-lived prey. This prediction is supported by the almost complete failure of artificially released predators in reducing numbers of their prey in hundreds of cases archived in the BIOCAT database. Manipulative hand-removal of predators did not result in an increase in peak pest numbers either, as reported in some studies. On the other hand, prey numbers in cage exclusion experiments were larger in cages, compared with uncaged plots, which the authors attributed to the effect of predators. Here we show, using a large data set, that some types of cages do not reduce the numbers of predators significantly and therefore the larger prey numbers in cages must be attributed to other factors than lacking predation. Our detailed analysis revealed that the impossibility for prey to emigrate from cages might account for the larger prey numbers inside the cages. Thus there is no proof of predator large efficiency in controlling insect pests. Understanding true value of predators in ecosystems is necessary for proper evaluation of ecosystem services.