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"Conservation biology and beyond: from science to practice"

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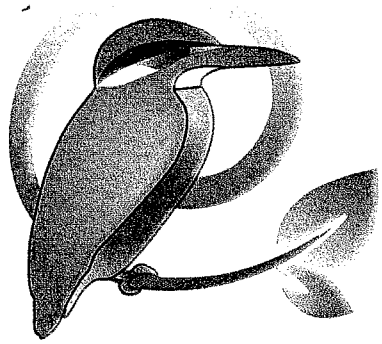

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BOOK OF ABSTRACTS

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the dispersal abilities and adult ecological requirements of *H. ferruginea* which will be taken into account in prescriptions for managing this species. Emergence traps and observations of adults visiting decaying aspen represent effective ways to investigate the ecology of this and probably other dead wood insects.

416. PATTERNS OF IMPACTS OF FOUR HIGHLY INVASIVE PLANTS SPECIES ON NATIVE VEGETATION IN BELGIUM

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There is a need to improve our ability to predict species responses to human-induced global change, such as the consequences of plant invasions, given their ecological, economical, and societal deleterious effects. It is often suggested that diverse communities are less likely to be invaded, but both negative and positive relationships, between native flora richness and invasion, have been reported. Invaders may induce differential impacts on different species, resulting in fundamental changes in community structure. We investigated the patterns of impacts of four highly invasive species (HIPS) on native plant species richness, structure and composition in Belgium, with a particular focus on sites of high biological value. Our results showed that the four target species tended to invade diverse habitats or vegetation communities. Disturbances appeared to be the main cause of invaders establishment. The reduction in native plant richness/ diversity was a common pattern to invasion. However, the magnitude of impacts were species specific. Although sites of high biological value were targeted, no endangered species or species of concern was found to be directly impacted by invasion. Indirect consequences on whole communities should be further studied and taken into account in order to produce an integrated ranking of HIPS impacts.

417. ACTION VERSUS RESULT-ORIENTED SCHEMES: A DYNAMIC MODELLING APPROACH LINKING GRAZING AND BIRD POPULATIONS IN A GRASSLAND AGRO-ECOSYSTEM

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In Europe, most agri-environment schemes are action-oriented. However recent assessment indicates mixed benefits for biodiversity. It has been suggested that the development of result-oriented measures could improve their efficiency. The objective of this study was to assess whether result-based measures could be more efficient in conciliating production and conservation outcomes. We focused on a grazed grassland agro-ecosystem which is the breeding habitat of two wader species. A dynamic model of grass and bird populations was developed to predict grazing strategies ensuring bird conservation. Viable control approach was used to identify out of the whole set of possible grazing strategies, those respecting constraints at any time. To compare both agri-environment schemes, the model was run with constraints either defined to represent action-oriented (threshold on maximal stocking rates) or result-oriented measures (threshold on minimal bird population size at horizon). Model simulations show that result-oriented measures were more efficient in conciliating production and conservation because they made it possible to alternate grazing intensity between years. This strategy was not feasible with action-oriented measures. These results could contribute to define alternative agri-environment schemes with better profit for both production and conservation goals in agricultural grasslands.

418. MALE'S SEXUAL ORNAMENTS REFLECT FERTILITY AND SURVIVAL OF THEIR PROGENY: APPLICATION TO CAPTIVE BREEDING AND REINTRODUCTION

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In captive breeding programmes involving small populations, minimising genetic drift is obtained by equalizing founder representation while minimizing inbreeding. Therefore, females have no choice of their mate. Because maximizing genetic diversity does not distinguish between beneficial and deleterious alleles, some authors have suggested that ensuring that all individuals breed may not be the best management strategy and that when effective population sizes are adequate, it might be better to allow females to choose the best mate. In order to assess the potential benefits of mate choice in captive breeding we used a houbara bustard (Chlamydotis undulata) supportive breeding associated with restocking of populations in Morocco. In this lekking species, using an immune challenge experiment we empirically verified that by assessing male courtship display, females may gain insight into the current phenotypic quality of mates and gather direct benefits in terms of fertilization power and indirect benefit in terms of "good genes" for their progeny. By releasing 120 offspring sired by 15 males, we found that males of high quality sired a progeny that better survived once released into their natural habitat. Therefore, Houbara bustard's displaying activity may reveal a general immunocompetence that would be transmitted to their offspring.

419. A MULTIPLE-ANALYSIS APPROACH FOR HIGHLIGHTING CONSERVATION OPPORTUNITIES IN AN URBAN LANDSCAPE

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Towns and cities are often considered to be disconnected from the wider natural landscape. However, these regions play an integrated role in the delivery of ecosystem services. Biodiversity is an ecosystem service that in urban regions has the potential to be fulfilled in a higher capacity. The objective of this research was to investigate ways in which landscape scale conservation could be more fully implemented to enhance biodiversity in urban regions of the United Kingdom. A multiple-analysis approach was used to assess landscape permeability and habitat density. Research focused on the predominantly urban Borough of Halton, Northwest England. Landscape permeability was assessed for ten umbrella species and used to create cost distance maps using GIS. This method was based on comprehensive habitat data produced using the UK Phase 1 Habitat Survey procedure. A moving window-based statistical analysis was then used to highlight areas with enough habitat to potentially support viable populations of the umbrella species. The results of these analyses were combined to produce opportunity maps illustrating where conservation and restoration efforts should be targeted. This approach can be used by urban conservation managers to determine where to direct resources for enhancing habitats within the context of the wider landscape.