

ABSTRACT BOOK

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We present a perspective of elephants as co-equal partner stakeholders in the Amboseli ecosystem of southern Kenya, along with the local land owners, the Maasai and their livestock. This well protected elephant population of some 1500 individuals ranges over 8000 km² of pastoralist rangeland, which has only in the last 4 years begun to become fragmented and fenced. Therefore understanding the dynamics of stakeholder interactions and use of space may contribute to ensuring the continued sharing of that space between species. Landscape usage patterns combined with threats (mortality, risk of injury) to stakeholders (elephants and people) are commonly used to indicate responses to risk. Here, we take an integrative and long-term approach that maps elephant responses to humans, using (a) historical dung locations from the 1990s; (b) recent elephant movements from tracking of collared female elephants in 2013; and (c) the location of human settlements and human, livestock or elephant injuries or deaths from 2006 to 2013. In addition to historical and recent usage mapping, we present a qualitative representation of elephant dispersal corridors based on 42 years of knowledge of their use of the landscape in relation to human settlements and vital water resources. We also examine elephant grouping patterns and densities over the very long term as behavioural responses to risks from humans.

ID 7. WILD GREAT APES AS SOURCES AND SENTINELS FOR EMERGING INFECTIOUS DISEASES

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Emerging zoonotic infectious diseases originating from wildlife pose a serious threat to human health. This is especially true in relation to microorganisms originating from great apes, whose close phylogenetic relationship with humans results in high potential for microorganism exchange. Intense contact between humans and great apes occurs during bushmeat hunting, which is widely practiced throughout most of the great ape's remaining habitats. I will present examples of how studies on the microorganisms of wild great apes can lead to the discovery of novel pathogens of potential importance for humans. I will also illustrate how these primates, living in their natural habitats, can serve as sentinels for diseases with high likelihoods of emergence into human populations. Greater efforts in broad geographic collection of non-invasive samples from live great apes, as well as systematic collection of samples from wildlife carcasses (either found dead or via

bushmeat studies), coupled with improvements in sample preservation and novel diagnostic capacities, will rapidly improve our understanding of the diversity and distribution of microorganisms in wild great apes. In addition, collaborations with projects focused on great apes habituated to human presence (for research and/or tourism) will allow for more in-depth studies. Linking non-invasive diagnostic data obtained from analyses of materials such as faeces and urine samples, with observational health data from wild great apes are a promising approach for the discovery of not only acute disease causing microorganisms, but also chronic infections, potentially very relevant for human health.

218 THE EU CONSERVATION DIRECTIVES - REFIT AND A PERSPECTIVE FROM THE EU COMMISSION

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The 1979 Birds Directive and the 1992 Habitats Directive provide a common EU framework that sets the standards for nature protection across the Member States. The aim of these directives is to contribute to ensuring biodiversity in the EU. A key component for this to be achieved is through conservation and sustainable use of an EU network of areas of high biodiversity value, called Natura 2000 which now consists of more than 27.000 sites covering over 18% of the EU terrestrial area and over 4% of the marine area. As part of its Smart Regulation policy the Commission has initiated a Regulatory Fitness and Performance Programme (REFIT). Under the first stages of this programme, the Commission has reviewed the entire stock of EU legislation and decided on follow-up actions, one of which is a 'Fitness Check' involving a comprehensive policy evaluation. The fitness Checks provide an evidence-based critical analysis of whether EU actions are proportionate to their objectives and delivering as expected. Evidence from the fitness check will be collected through a comprehensive and wide ranging consultation. The REFIT process is about making sure that EU legislation is 'fit for purpose'. There is no prefixed decision at this stage that the legislation will be changed and the objectives of the legislation are not being called into question. The results of the on-going Fitness Check of the Birds and Habitats Directives are expected to be ready by early 2016.

DISENTANGLING THE MULTIPLE EFFECTS OF LAND USE ON FISH ASSEMBLAGES IN AMAZON STREAMS

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Land use change (LUC) can have a major impact on small streams and is of major concern in the tropics where rates of deforestation and land-use intensification remain very high. Yet the processes by which LUC alters tropical streams remain very poorly understood. Here we present results of the most comprehensive multi-scale assessment of the biological condition of headwater streams in the human-modified eastern Amazon, examining taxonomic and functional responses of fish assemblages to both LUC and changes in physical stream habitat. We sampled fish in 99 streams encompassing five river basins and two large regions, and characterized instream habitat by several physical attributes and key LUC variables, including density of road crossings, deforestation, and agricultural intensification. All 141 species were characterized in terms of their function using ecomorphological traits describing feeding, locomotion, and habitat. Overall we found that multiple drivers operating at different spatial scales influence stream condition, including taxonomic and functional diversity. Our results highlight the highly heterogeneous nature of such systems, where species turnover between stream sites represent 70% of gamma diversity, and assemblages exhibit distinct responses to similar drivers in different basins or regions. That said, some general patterns emerged, including a threshold of 70 to 80% of catchment forest cover above which water temperature is consistently lower than in more deforested areas; and a trend of functional homogenization due to the effect of road crossings. Our results underscore the importance of some landscape changes often unrecognised, such as road crossings and agriculture intensification that can have a marked effect on streams. We draw on the relationships observed in our data to suggest priorities for the improved management of stream systems in the multiple-use landscapes that characterise so much of the human-modified tropics.

THE EFFECT OF ROCK TYPE AND LANDSCAPE PROPRIETIES IN THE POPULATION DEMOGRAPHY, GENETIC STRUCTURE, PHENOTYPIC DIVERGENCE AND REPRODUCTIVE INVESTMENT IN A NEOTROPICAL MONTANE ORCHID

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Knowledge of the role of Neotropical montane landscapes in shaping genetic connectivity and local adaptation is essential for understanding the evolutionary processes that have shaped the extraordinary species diversity in these regions. In the present study, we examined the landscape genetics, estimated genetic diversity, and explored the effect of rock outcrop type in demographic structure, morphological variability and reproductive strategies in seven natural populations of *Cattleya liliputana* (Orchidaceae). Nuclear microsatellite markers were used for genetic analyses. Spatial Bayesian clustering and population-based analyses revealed significant genetic structuring and high genetic diversity ($H_e = 0.733 \pm 0.03$). Strong differentiation was found between populations over short spatial scales ($F_{ST} = 0.138, p < 0.001$), reflecting the landscape discontinuity and isolation. Monmonier's maximum difference algorithm, Bayesian analysis on STRUCTURE and principal component analysis identified one major genetic discontinuity reflecting the variation in types of rock outcrops. Divergent genetic groups showed phenotypic divergence in flower traits and reproductive strategies. Approximate Bayesian Computation (ABC) modelling suggested low gene flow between populations at different rock outcrop and signs of population bottleneck. Demographic structure and increased sexual reproductive effort was associated with rock outcrop type and may be a response to adverse conditions for growth and vegetative reproduction. Here we show that divergent habitat (rock type) and restricted gene flow are drivers of population differentiation in Neotropical montane rock outcrops. These genetic divergence and rock type should be considered for an efficient conservation planning.

191 THE POWER OF BEHAVIOUR CHANGE. HOW TO APPLY SOCIAL MARKETING PRINCIPLES TO CONSERVATION ISSUES

Christiane Lellig

European Social Marketing Association / Stratageme Consulting Limited

Most of the current challenges the world faces today are manmade and therefore behaviour driven. These behaviours

