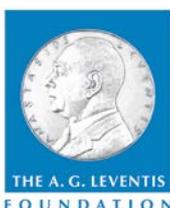


Talks and Posters



University of Cambridge

28-30 March 2017



Building links among young conservation scientists and practitioners

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Governance of Malagasy forests

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Madagascar, a global conservation priority is also known as the land of ancestors. Adopting a 'landscape biography' perspective to the complex human-environment, I analysed how the competing claims on Malagasy forest are legitimised and what might be the consequences. While conservationists' use of a mix of arguments, from coercive measures, use of local cultural concepts and incentives, works now, it might be unsustainable. The human-environment system, once set in motion by conservation interventions, continues moving and conservationists should not be deceived by apparent/present success in the physical and anticipate evolution by also looking at the cultural and institutional environment.

15 years of managing human-elephant conflict in Sumatra

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Since 2002, WCS-IP and local communities have been developing various methods to reduce human-elephant conflict in form of crop raiding around Way Kambas National Park, Indonesia. Evaluation on these methods implementation is crucial to assess the effectiveness of each technique to deter elephant from entering crop areas. Here, we evaluated eight intervention methods implemented around WKNP including: 1)tin-can fences, 2)tripwire-triggered fences, 3)trenches, 4)barbed-wire fences, 5)beehive fences, 6)chilli fences and dung fires, 7)rolling drums, and 8)community-based guarding. The description, implementation, advantages, and disadvantages of these methods are discussed. We also provided the recommendation for future implementation to manage conflict in WKNP.

Understanding tiger population dynamics

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Understanding ecological mechanisms that permit high tiger density would be of help in recovering tiger numbers. Besides, spatio-temporal dynamics of high density tiger population can refine our understanding of tiger ecology. We camera trapped 500 km² area in Corbett Tiger Reserve(2010-2015) under open Capture Recapture and analyzed photo-capture histories of tigers to estimate population parameters. Tiger numbers remained constant at ecological carrying capacity but with high individual turnover. Annual survival probability was 0.63 (SE 0.04) for males and 0.84 (SE 0.07) for females. High reproductive potential

and individual turnover makes Corbett "tiger nursery" for high conservation priority Terai landscape.

Hierarchical threat assessment of a Mauritius endemic

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Over 10,000 island endemic plants worldwide are estimated to be highly threatened with extinction. *Roussea simplex*, a threatened Mauritius endemic once common, makes an interesting model to investigate threats to insular plants. Using the literature coupled with observational and manipulative experiments, the species' ecology was studied to inform its conservation management. The plant interacts with various competitors, predators, nectar robbers with spatio-temporally varying impacts. Previous studies identified threats mainly novel to the scientific literature that weakly unravelled more important threats now identified. Conservation management should rest on a complete and hierarchized documentation of threats to maximise returns of conservation efforts.

Roads and habitat use by the Endangered Baird's Tapir

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Roads directly impact wildlife by affecting population dynamics, ecology, gene flow, and increasing mortality. Using detection/non-detection camera trap survey dataset, we elucidated factors affecting Baird's Tapir habitat use across a forest complex bisected by the Panamerican Highway. Habitat use was modelled using fine scale covariates and analytical techniques to account for spatial autocorrelation. We also investigated the relationship between road kills and road architecture. Tapir's habitat use was higher when closer to water bodies, inside protected areas and forest covered areas. Tapirs do not appear to change their habitat use near roads, meaning that their frequent use of forests along roads may make them more susceptible to collisions with cars. We found a correlation between high tapir habitat use areas and historical road-kills. Additionally, we found that most road-kills happened in straight segments of the road where forest is less than 5m away from the asphalt. Our findings are valuable for road development planning, specially to optimize the site selection of mitigation structures and predicting how this species will use the habitat when is fragmented by roads.

Do freshwater protected areas conserve Lake Tanganyika's cichlids?

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Freshwater ecosystems contain a disproportionately high amount of global biodiversity as well as being hotspots of endangerment. However, there are a lack of freshwater protected areas (FPAs), and our understanding of how freshwater communities respond to human impact remains poor. We consider how the species diversity of Lake Tanganyika (LT) cichlid fishes is affected by a gradient of human disturbance. We find a trend of decreasing species diversity as human disturbance increases, and conclude FPAs can be successful in the conservation of LT cichlid diversity, and recommend the designation of more FPAs globally to alleviate the decline of freshwater biodiversity.

A new home for Asiatic lions?

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Reintroducing Asiatic lions, restricted to a single-population, at alternative sites is essential to ensure against extinction of the species. However, the long-proposed reintroduction-programme at the selected site is shrouded in conservation politics. Consequently, we explored the potential of a second-home for lions in their former range. Camera-trapping and distance-sampling were done to estimate abundances of predator and prey at the site. Perceptions of local-communities regarding reintroduction were quantified through questionnaires. Soft release of few lions concurrent with incentive-driven voluntary-resettlement of pastoralists from the site, restocking prey-base and compensating conflicts would be the ideal strategy to reinstate a second lion population.

Social impacts of protected areas in Nepal

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PAs aim to safeguard biodiversity by limiting anthropogenic activities, leading to potential negative impacts on people's livelihoods. Conversely, PAs can safeguard ecosystem services that communities depend on, and generate sources of income through ecotourism. Currently, assessments tend to focus on small-sample case studies that do not provide clear causal links because they are unable to account for confounding factors (e.g., many PAs are located in agricultural unsuitable areas). We use regression and matching analysis to generate quantitative estimates of the social impact of PAs. A greater understanding of PA impacts will be crucial in reaching the Sustainable Development Goals.

Medium-sized mammals in cacao agroforests

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Traditional cacao agroforests (cabruças) are wildlife-friendly systems that conciliate production and conservation. The aim of our study was to analyze the importance of native forest remnants for medium-sized mammal conservation in a landscape majorly composed by cabruças. We used camera-traps to record medium-sized mammals in 15 cabruças at different distances from forest remnants (120 - 3000 m). Cabruças hold several mammal species independently of presence of native habitat in sampling site surroundings. However, mammal assemblages lack some forest specialists and game species, and agroforests at greater distance to native forest are more likely to be used by one generalist species.

Crop pollination and semi-natural habitats

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Biodiversity can deliver important ecosystem services such as pollinating crops. We have studied how wild pollinators contribute to leek-seed production in five female lines, and what the influence of semi-natural habitat is in providing these wild pollinators. We found female line-specific responses of plant-size, bumblebee-visitation rate and species richness on seed set and quality. Larger surfaces of semi-natural habitat in the landscape increased pollinator species richness and abundance in the fields. This suggests that the conservation of semi-natural habitat is important for delivering stable pollination services in agricultural crops by providing large numbers of crop pollinators.

Deep reef refuges in Cozumel, Mexico

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We conducted the first characterisation of Mesophotic Coral Ecosystems (MCEs; reefs 30–150 m deep) around Cozumel, Mexico comparing inside and outside the National Marine Park (MPA). We found positive MPA effects on hard coral cover, reef fish biomass and large-bodied fish on shallow reefs, but little difference based on protection status on MCEs. Our results suggest MCEs act as natural refuges for threatened species when compared to shallow reefs. Generally, however we found that large-bodied fish were depleted regardless of protection status or depth. Our results support more holistic reef management approaches, integrating MCEs into MPA management plans.

Livestock predation by Ethiopian wolves

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Human-predator conflict is a major threat to conservation efforts. This study combines diet analyses (47 scat samples) with 157 questionnaires to local communities to assess whether attitudes towards the endangered Ethiopian wolf are rooted on perceived or real impacts in a highly threatened population (~20 wolves). I explored how attitudes related to perceived or real losses, and conducted meta-analyses of Ethiopian wolf conflicts across Ethiopia. Wolves remain specialized predators of rodents, yet most people (61%) reported negative attitudes due to livestock predation. Low levels of predation are impacting poor pastoralists across the wolves range, leading to negative attitudes towards conservation.

Rediscovery of the Travancore bush frog

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Species are declared extinct or lost sometimes without robust survey effort in suitable habitats. The lack of information on microhabitat and ecology in species description was the major issue. The southern Western Ghats endemic Travancore Bush frog is one such example. It was declared extinct in 2004. Later the species recorded from ten locations. The macro-habitat specificity could be the reason why the species was not detected previously. The IUCN Red List is integral to setting species-level conservation priorities. This study could be used as a model for newly rediscovered and potentially highly threatened species.

Managing *Ranunculus* for salmonid conservation

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Atlantic salmon (*Salmo salar*) numbers have declined by up to 70% in the last 20 years. To address this decline, salmon populations have been managed to maximise the number of juveniles migrating to sea from natal freshwater sites. My research aim is to understand how freshwater habitat, notably cover of *Ranunculus* (a dominant chalk stream macrophyte), affects salmon and trout (salmonid) densities so that habitat can be managed to maximise their numbers. Initial findings suggest that young-of-the-year salmonid density increased with increasing *Ranunculus* cover, highlighting the potential application of *Ranunculus* management as a tool for enhancing salmon populations.

The effects of disturbance on Tanzanian forest mammals

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There is a lack of systematic data to assess the effects of anthropogenic activities on spatio-temporal patterns of abundance for forest mammals. We conducted systematic camera trapping surveys for six years from 2009 to 2014 in Mwanihana forest in Udzungwa Mountains. Sixty camera traps were set for 30 days yearly during the dry season. We compared the effects of poaching and firewood collections on species' relative abundance. We showed that firewood collection impacted negatively on species' relative abundance as well as poaching. Efforts to curb poaching activities should be intensified alongside providing environmental education to the locals.

The effects of changes in herding practices in the South Gobi

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This study aimed to assess how changes in herding practices affected depredation rates from snow leopards and wolves in the South Gobi, Mongolia. Questionnaire surveys carried out to assess changes in pastoral practices and livestock depredation over one year. Herders were more likely to lose livestock to snow leopards if they did not change pastures between seasons (AICc summed weight 0.91). Whereas herders were more likely to lose livestock to wolves if they left their livestock unattended when they travelled to the nearby community center (AICc summed weight = 1). We make recommendations on how to minimize human-wildlife conflicts by improving livestock husbandry management.

Using Wikipedia to quantify cultural interest in species

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Modern conservation operates at the nexus of biological and social influences. While the importance of social and cultural factors is often mentioned, defining, measure and comparing these factors remains a significant challenge. Here I describe a novel method to quantify the cultural interest in different species using Wikipedia—a large, open-access online encyclopaedia. Using metrics such as page views and page length, I compare which species generate the greatest cultural interest and investigate what biological, geographic and cultural factors might drive that interest.

Human-amphibian conflict in India

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An age-old myth of amphibians consuming cardamom has resulted in culling of amphibians at plantations across Western Ghats. Questionnaire surveys were conducted to understand the prevalence of the myth and associated perceptions. Time-activity budget surveys and diet analyses were conducted to determine whether amphibians consumed cardamom. The myth was widespread at small sized plantations amongst workers even though amphibians did not consume cardamom. The plantation community perceived high economic loss due to this, which led to reduced interest for amphibian conservation. These plantations harbour numerous critically endangered amphibians and targeting this myth is key to their conservation outside protected areas.

Does recovery of ecosystems equal recovery of ecosystem services?

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In 25 years, Nerbioi estuary shifted from degraded status to near-recovered status. Biotic and abiotic data show ecological improvement, but is still unclear if the delivery of cultural ecosystem services (i.e. recreational fishing) has improved. A questionnaire was used to study fishers' perceptions and compare with ecological data. Results show a positive correlation between ecological spatial recovery and the expansion of recreational fishing to the inner part of the estuary. However, fishers' perceptions do not always correspond with demonstrated recovery. This study concludes that a better functioning environment has the potential to deliver ecosystem services and to improve human well-being.

Spatial patterns of poaching in the Serengeti

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Illegal activities threaten species in protected areas (PAs) globally, but little information exists to improve anti-poaching activities. We walked 880 km of transect in the Serengeti ecosystem, Tanzania, and used Bayesian hierarchical models to investigate the spatial distribution and drivers of poaching. Different classes of poaching showed varying distribution patterns across different PAs. Illegal activities varied at local and landscape scales and were influenced by different ecological and habitat characteristics. We estimate a few hundred thousand wire snares may be set in Serengeti and demonstrate the usefulness of our novel method for improving conservation monitoring and crime detection in PAs.

Conservation action across ecosystem boundaries

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Impacts of environmental degradation and restoration are rarely confined to discrete biomes, therefore the separation of conservation management and funding into single realms reduces conservation efficiency. We investigate the potential gains to coral reef restoration through management of the terrestrial grazing on Bonaire, Caribbean Netherlands. We used reported costs of previous grazer control programs to estimate costs of each strategy, and choice experiments with reef users to estimate willingness to pay for improvements predicted to arise through management options. Cost curves indicated invasive grazer exclosures to be most cost-effective, with costs within the potential funds raised by system users.

Clouded leopard distribution in Malaysia

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Malaysia experiences one of the highest deforestation rates in the world, placing heavy pressures on forest carnivores. Yet, little is known about how the vulnerable clouded leopard responds to habitat changes. We used fine scale variables and the largest detection/non-detection dataset known for the species to investigate its occupancy on Peninsular Malaysia. We identified that elevation, forest cover, forest fragmentation are influential to clouded leopard occupancy. Using these findings, we modelled the species distribution across the whole Peninsular Malaysia and identified priority core areas and examined planned linkages suitability for the conservation of clouded leopard in a human dominated landscape.

Neotropical bats in a recovering forest landscape

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Ecological restoration of fragmented landscapes is of the utmost importance for tropical biodiversity conservation. We sampled bats ~15 and ~30 years after forest clearing at a large-scale Amazonian fragmentation experiment to assess how species responded to the regeneration of the second growth matrix. Whereas negligible and negative effects were found for the occupancy and abundance of generalists, specialists, which are of primary conservation concern, greatly benefited from secondary forest maturation. Our findings emphasize that although conservation of old-growth forest should always be prioritized,

protection of advanced-stage secondary forests should be incentivized as it brings considerable benefits to global conservation efforts.

Microclimates in logged tropical forest

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Habitat degradation by selective logging is extensive across the tropics. Even at high logging intensities these forests retain high biodiversity, but it is not clear if this will remain true under projected climate warming. Within unlogged, primary tropical forest, mobile species can avoid climatic extremes by moving locally into more suitable microclimates. Using thermal imaging cameras and temperature loggers we characterised spatiotemporal variation in surface temperature and air temperature, in unlogged and intensively logged forests of Borneo. We ask whether the two forest types are equally capable of buffering future warming through provisioning of favourable microclimates for forest interior species.

Socio-economic costs of producing food

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Can food security be guaranteed for all, while also shrinking agriculture's environmental footprint? Some argue that an important component for achieving this balance will require a landscape where the land for nature and agriculture are segregated (land-sparing), while others argue that integration of the two (land-sharing) is a better option. Assessments of land-sharing, land-sparing have largely failed to assess the broader socio-economic impacts of their implementation. Using role-playing games and agent-based model three land-sharing land-sparing scenarios were tested in rural India and assessed for their comparative merits. Benefits were reported under both strategies but with different implications for local livelihoods.

Using online data to track Thailand's illegal rosewood trade

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We use seizure data via online news reports to explore the Siamese rosewood (*Dalbergia cochinchinensis*) trade in Thailand. From January 2014 to April 2016, 835 independent seizure reports were collected. We find spatial patterns concentrated in provinces in the north-east and eastern region, covering 37 of 76 provinces across Thailand. Domestic legislation was found to be sub-par to international standards in regulating rosewood timber trade. Additionally, CITES

penalties are also unenforced in the Mekong region. Importantly, we demonstrate that online media-sourced seizure data is a viable and beneficial source to study and monitor illegal wildlife trade in real-time.

The persistence of illegal sturgeon fishing

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Over the last 20 years, the populations of two genera of Caspian sturgeons (*Acipenser* and *Huso*), belonging to six species, have experienced a steep decline. Overfishing, habitat loss due to impoundment, pollution and urban development, illegal fishing, IWT and invasive species have been listed among the main threats to the conservation of sturgeon. New qualitative evidence collected in the field, shows in which ways old practices of fishing of sturgeon successfully adopt to anti-poaching measures and, in the foreseeable future, will not likely to go away.

Supporting conservation: the role of flagship species and identifiable victims

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Psychological insights into human behaviour can have enormous applied value for promoting charitable giving, but the application of these insights to conservation appeals featuring nonhuman animals has scarcely been explored. We used a modified Dictator Game to experimentally investigate how (1) identifiable versus statistical beneficiaries and (2) flagship versus non flagship species affect donations to a conservation charity. Unexpectedly, subjects did not donate more when presented with single identifiable beneficiaries rather than groups of beneficiaries. Flagship species, on the other hand, increased donation amounts relative to appeals featuring non flagship species. Our results yield important and practically applicable insights for conservation organisations.

Cranes and crops in the South Africa's Western Cape

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The Western Cape population of Blue Cranes (*Anthropoides paradiseus*) is of great importance as the largest population throughout its range. However, this population is strongly associated with agricultural lands, and therefore may come into conflict with farmers who perceive them as damaging to crops. We investigated the viability of this population in 3 ways: exploring farmer attitudes towards cranes using interviews, generating estimates of survival, and exploring movement patterns using a long-term dataset of marked individuals. Our results highlight the need for location-specific solutions to crop-damage by cranes, and

contribute to the understanding of basic demographics for this vulnerable species.

South China's changing turtle trade

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The open sales of endangered freshwater turtle and tortoise in south China have been decreasing over years in terms of quantity and species diversity. However, there are alarming trends underneath: the popularization of keeping turtle as pet, the concomitant online trading of rare species, and the controversial flourish of turtle farming industry. The trends place new threats to global turtle species, and challenge China's wildlife protection law and its enforcement. While the new Chinese wildlife law opened new opportunities to address the well-hidden trade of protected turtle species, its enforcement and impact on the ground remain to be seen.

Predicting bat collisions at wind farms

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West Pomerania is the leading region in wind energy production in Poland and further development can be expected. Location of the new wind farms should be carefully selected to reduce negative environmental impacts such as collisions of bats with turbines. We used spatial statistical methods (ENFA and MADIFA) to identify geographical variables associated with collision probability. We based the analysis on collision records from the region and compared the results with data from German state Brandenburg. To improve prediction power BRT modeling was introduced. We created collision probability maps as a possible tool in future planning of wind farms.

Changes in China's forests since 2000

DI ZHANG

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In 2014, we interpreted the Global Forest Watch (GFW) dataset and compared the results with other datasets, including the National Forest Inventory, ChinaCover and GlobeLand30. Results show that GFW dataset has reliable accuracy, but different from other datasets, GFW identified a net forest loss of 37,551–42,031 km² in China during 2000–2010. Furthermore, by the end of 2013, there was an overall forest loss of 1,200 km² among 407 national nature reserves. In 2016, we carried out a ground verification work among NNRs with the most forest loss and tried to understand the driving factors behind.

Notes

Factors affecting Lekki Conservation Centre (LCC) Biodiversity Sustainability

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Lekki Conservation Centre(LCC) is located in Lekki, Lagos State, Nigeria. Its biodiversity richness is paramount to the conservation efforts in Nigeria as it is the only biodiversity hotspot retaining the unique biological resources of the Lekki Peninsula in Lagos. Hence, the need for its continued sustainability. The Face-to-Face structured interview was used to gather response from the participants. Findings show that not all installed facilities were eco-friendly. There is also the challenge of Mona Monkey (*Cercopithecus mona*) invasion into the host community. There is a need for massive environmental awareness advocacy, especially on waste management.

Anthophiles across landuse and seasons

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Insect diversity loss in terrestrial ecosystems is driven by land use intensification, habitat loss and other anthropogenic activities. This study investigated the effect of land use change (grasslands, agricultural lands and secondary forest) and seasonal variation on the species richness, diversity and abundance of anthophilous insects. Higher abundance was recorded in secondary forest and grassland land compared to agricultural lands. There was no significant difference in the species richness and diversity of anthophilous insects among the land use types. The effect of seasonal variation was more observable on grassland and agricultural land compared to secondary forest.

From Rivers to Dinner Tables: Exploitation of Frogs for Consumption in Ghana

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Exploitation of frogs for food and trade have resulted in the decline of many native populations. Nevertheless, this situation remains poorly documented especially in West Africa. This study detailed the harvesting patterns and trade of frogs in Ghana. Through interviews and market surveys, species and their quantities harvested, as well as actors of exploitation were identified together with trade routes, a potential for disease spread. The majority of respondents (80%) consumed frog meat. Traders on average, sold 90 individuals per week. These findings will serve as the reference to

developing effective trade monitoring schemes for Ghana and its neighbouring countries.

Can we save India's tigers?

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Success of any wildlife conservation project typically depends on local people's support, which in turn is linked to their socioeconomic and cultural needs and attitudes. Using tiger conservation efforts in India as a case study, we examined the attitude/behaviour and resource consumption patterns and its influence on conservation success. Remote sensing data to measure the land-use changes on the wildlife habitat and literature/archival review for behavioural trends proved most useful for analysis. Our study demonstrates the importance of developing landscape or even national level conservation priorities. We suggest a systematic bottom-up approach for effective conservation of wildlife.

Fragmentation effect on seed dispersal by frugivorous birds

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Understanding the seed dispersal process in heterogeneous environments can facilitate the comprehension of habitat occupation and regional population dynamics. Through a systematic review, in addition to spatial analysis, I am evaluating the fragmentation effect on seed dispersal by birds. Preliminary results based on 115 case studies show that the estimated distance of seed dispersal is remarkably higher in preserved than in fragmented areas. The spatial component of ecological studies can aid characterization of nature of interactions between organisms and environments, which is fundamental for environmental planning and conservation actions.

Land-use pattern effects upon antelopes

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Abohar wildlife sanctuary (Asia's largest open privately-owned sanctuary) is home to 4500 black bucks (*Antelope cervicapra*) and 5500 blue bulls (*Boselaphus tragocamelus*). Area under agricultural practices in the sanctuary has gradually expanded over 80 percent. Subsequently, natural habitat of the animals has whittled down, forcing them to survive near agricultural fields. The raiding herd of antelopes frequently invade crop

fields, feeding upon and trampling whatever comes in their course, causing irreparable damage to the farmers. In last four years, 148 black bucks and 236 blue bulls were killed because of barbed fencing, mud walls, feral dogs, road mishaps and rivers.

An insight into the population and space use of principal prey species of tigers in Corbett Tiger Reserve, India.

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Understanding distribution and abundance of prey species is crucial from both ecological and conservation point of view. In our current study on monitoring tigers and its prey in Corbett Tiger Reserve, we investigated the abundance and spatially explicit habit use pattern of principal prey species of tiger (spotted deer and sambar deer) using line transect based conventional distance sampling and density surface modelling approaches. We also modelled the effect of differential densities of tiger on space use of these species using pellet counts across camera trap sites along with other ecologically significant ground and remotely sensed habitat covariates.

Caatinga's natural regeneration after agriculture

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Understanding as the secondary forests retains biodiversity is a frequent question. Our objective was to know the regeneration potential of the abandoned areas after the agricultural use. We sampled woody species in 20 plots and made chemical and physical analyzes of soil. The secondary forest showed rapid recovery taxonomic with initial plots having the same taxonomic composition that late and control. There wasn't an increase in the richness and diversity. The soil hasn't changed over time. The intense land use has led to a taxonomic and edaphic homogenization in the landscape. This configuration is common in dry and wet forest.

Conservation of Franciscana dolphins (*Pontoporia blainvillei*)

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Franciscana dolphins (*Pontoporia blainvillei*) are the most endangered dolphins of the South West Atlantic Ocean. Bycatch in artisanal fishing gillnets is a major issue resulting in their main threat. During the past 15 years a conservation NGO has been developing a cooperative work with artisanal fishers from Argentina in order to reduce the mortality of this

species. Different projects addressed innovation to mitigate the bycatch of Franciscanas. The use of acoustic deterrent devices (pingers), reflective gillnets, alternative fishing gear (handlines and fish traps) were tested along with the fishers, aiming to find a solution that might reduce the mortality events.

Wood Warbler wintering habitat

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We investigate habitat use of a declining Palearctic migrant, the Wood Warbler (*Phylloscopus sibilatrix*) and to understand the socioeconomic drivers of land-use change, on its wintering grounds in Ghana, West Africa. Point counts, mist netting, radio tracking and habitat mapping as well as focus group discussions with farmers in study area were carried out. This study provides an insight into the potential drivers of the Wood Warbler decline, by assessing the impact of farming systems on the species' preferred habitat, and the potential for working with farmers on the Wood Warbler's sub-Saharan wintering grounds to help reverse the species' fortunes.

Flight initiation distances of birds

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Flight Initiation Distance (FID), the distance at which prey animals initiate escape when approached by potential predator, is an essential element of conserving wildlife. This project investigated factors influencing FID in West Africa. The escape responses of five bird species to the approach of a pedestrian were examined in a West African nature reserve. Data were analysed using general linear models in R statistical package. Generally, FID increased with increased cost of staying and decreased with reduced cost of staying as predicted by escape theory. This study is the first to test the predictions of escape theory in West Africa.

A map of genetic diversity

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Latitudinal gradients of species richness have been extensively described, however less is known on how genetic diversity is globally distributed. We downloaded a total of 40372 cytochrome-b sequences of birds from

GenBank repository, of which we were able to assign geographic coordinates to around 20%. We show that high genetic diversity is distributed around the equator, decreasing when moving towards the poles; moreover, the northern hemisphere presents overall higher genetic diversity than the southern hemisphere. Adding information regarding migratory behaviour and IUCN category will reveal insights about adaptations against environmental variations, highlighting areas where species are more at risk.

Restoration of Ngong Forest, Kenya

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Ngong forest described as “plateau forest” is under increased threat due to heavily reliance for livelihood from neighboring communities. This project aimed at restoration of natural forest in Ngong, Kenya based on Miyawaki method. Based on a phytosociological analysis, 20 native species were selected for each plantation site (2007 & 2009). Follow ups on quadrants (10 by 5 cm) in each site were done annually. Survival rates of 62.0 and 65.0 whereas max height of 984 and 925cm were recorded. Forests are of great importance and Miyawaki method is effective in severe environments and should be used to restore them.

Socio-psychological drivers of urban bushmeat demand

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Understanding the cultural and socio-psychological factors driving urban bushmeat consumption is crucial to guide behavior change interventions, but is understudied. Through semi-structured interviews with bushmeat consumers in Pointe-Noire, R. Congo, I investigated perceptions attributed to bushmeat and animal proteins, as well as social norms and factors regulating urban demand to inform a behavior change intervention. Bushmeat was perceived as luxury and a status symbol, which underpins social norms to offer it. Bushmeat was also perceived as fresh and organic, in association with perceptions of tasty and healthy. Domestic animal proteins were positively perceived whereas frozen imported proteins were negatively perceived.

Poaching effect on Nicaraguan jaguars

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The advance of the cattle ranching frontier almost certainly threatens Nicaragua's Jaguar populations both by destroying Jaguar forest habitat in the species' last strongholds in the country, and by directly killing Jaguars in retaliation for attacks on livestock. We examined all available historical records of Jaguars being killed in the study area to establish the species' historical range. We then compared that with current occupancy as estimated using occupancy modelling of camera-trap obtained data within 47 36-km² grids. Hunting data were used as model covariates. We report a significant increase in the number of Jaguars killed each year since 2000.

Puerto Rico's invasive iguana origin

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Human-mediated dispersal has led to the spread of green iguanas (*Iguana iguana*) beyond their native Central and South America range. In Puerto Rico, although this species has become abundant little information is available about it. Our goal was to determine the source of green iguana in Puerto Rico and across its invasive range. We used published mitochondrial (ND4) and nuclear (NT3 & PAC) haplotypes to infer the relationship between native and invasive range iguanas. Using phylogenetic inference (ML & MP) we found that the sources of Puerto Rico populations were largely countries with a major role in the reptile's trade.

Does microplastic pose a threat to the sea squirt *Ciona intestinalis*?

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There is a widespread abundance of microplastic and nanoplastic in the marine environment. A number of marine species have been found to ingest these plastics and detrimental impacts from ingestion have been shown. The solitary sea squirt, *Ciona intestinalis*, was exposed to fluorescently labelled polystyrene micro- and nanoplastics and nylon microplastics. Two methods were used to quantify ingested plastics in. All plastic types were ingested, however, the methods used were found to give different results. Field studies also found plastics present in wild *C. intestinalis*. Ingestion of microplastics did not appear to result in any detrimental effects upon *C. intestinalis*.

Mammal scientific and cultural visibility

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The effects of research biases are still poorly understood. In order to understand that, we aim to assess whether cultural visibility and threat status of global mammalian species influence conservation research effort (scientific visibility). For this, we quantified research effort and public visibility of mammal species using innovative “culturomics” approaches and we used generalized linear models to explore the relationship between research effort, public visibility and conservation status. Our results highlight that many mammal species show low levels of research effort and public visibility. Furthermore, our results allow to identify species and groups in need of social and scientific support.

A “threatened” herbivore’s decrease

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The worldwide decrease of resources on mountains elicited by climate change enhances the competition potential for wild herbivores at both the interspecific and intraspecific levels. Cascading negative effects on population dynamics and social behaviour of Apennine chamois *Rupicapra pyrenaica ornata* triggered by resource exploitation have been found. Both the presence of a competitive ungulate, the red deer *Cervus elaphus*, as well as increased temperatures and reduced rainfall have influenced, via pasture depletion, stress-mediated behaviours related to foraging and intraspecific aggression of chamois. If combined to other causes, e.g. interspecific competition and climatic changes, a “threatened” species may be further endangered.

Bats and roads

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Roads have wide ranging impacts on the landscapes through which they are built, reducing both the availability and quality of habitats in their vicinity. Roads could impair the persistence of populations in a range of ways locally and thus influence the distribution of populations at the landscape scale. We examined the potential for roads to influence the distribution of bat roosts across the UK mainland by measuring the size of “accessible areas” defined by major roads and quantifying measures of habitat quality within them including the amount of broadleaved woodland and the density of minor roads.

Habitat modification impact on bats

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The Brazilian savanna (Cerrado) is a biodiversity hotspot under big pressure specially coming from human population growth, agriculture expansion and high deforestation rates that lead to extensive habitat changes, especially around protected areas (PAs). In our study we analyzed how bats are affected by habitat modification comparing assemblages inside and outside Cerrado PAs. We compared diversity patterns of bats in relation to species composition, number of captured bats, as well as body condition and reproductive condition in two vegetation habitats of the Cerrado (cerrado sensu stricto and gallery forests).

Spatial density of Asiatic lions

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The study aims to develop a sampling protocol to estimate spatial density of Asiatic lion (*Panthera leo persica*) and underlying governing factors. SECR polygon search method were used, where detection probability was modeled with search effort, group-size, and gender; spatial lion density was modeled as a function of prey, human disturbance, habitat features, and tourism hot-spots. Group-size and search-effort positively influenced detection probability. Males had higher detectability than females. Group density was 4.19(SE0.76) groups/100km²; individual density was 8.69(SE1.08) individuals/100km², with 3.1(SE0.6) for males and 5.6(SE0.9) for females. Spatial lion density was significantly correlated with tourism hot-spots, water availability, and elevation. The high-density areas were those where lions were artificially attracted for tourist viewing.

Biotic homogenization in a dominant-human landscape

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We address two questions: (1) which regeneration potential of areas abandoned after intense agricultural use; (2) what factors contribute to maintaining biodiversity in this landscape. We used linear models and multivariate ordinations to describe distribution and species composition between areas in regeneration after cultivation of sugarcane and surrounding mature forest. The regeneration showed recover quickly regarding richness and diversity reaching reference values after about sixteen years of regeneration, however, the most abundant species are also

more widely distributed species. This configuration reveals biotic homogenization of natural regeneration highlighting important role of rare species to biodiversity maintenance and ecosystem services.

Motivations for private land conservation

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It is increasingly recognized that conservation efforts must extend beyond formal protected areas to private land if we are to meet Aichi biodiversity targets. This research focuses on individuals who purchase land with biodiversity or ecosystem conservation as a primary consideration. Based on interviews with conservation buyers in 11 countries, a typology of motivational drivers shows that landowners are motivated by one or more of the following: investing, retreating to nature, developing replicable models, and being philanthropic. This research provides a framework for conceptualizing conservation land purchase and considering policy implications.

Urban bee conservation in Africa

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Through appropriate land-management, rapidly developing African cities could help conserve bee diversity and maintain productivity of urban agriculture. Yet little is known about bee populations in such settings. I assessed the potential of two Ghanaian cities for bee conservation. Across a stratified sample of habitats in rural, urban and peri-urban areas, I found no differences in bee abundances. However, habitat type (defined according to land-management practices and including agricultural, highly managed and unmanaged vegetation), had a strong effect with unmanaged vegetation hosting higher numbers of bees. Appropriately managed greenspaces in cities could, therefore, play an important role in bee conservation.

Human leopard interactions in Sri Lanka

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The Sri Lankan leopard, is distributed throughout the country with a population of 700- 950 individuals. Human-leopard interactions are inevitable as the human population increases. We researched all known records analysed on human-leopard interactions over the past 15 years and

surveyed 50 employees at 10 tea estates located within Sri Lanka's hilly Central Province to identify conflict hotspots. Of the 108 incidents reported nationally, ~1/3 occurred in the Central province, and 3/4 of those led to leopard deaths (typically by snaring). The district of NuwaraEliya accounted for 2/3 of conflict, which occurred in areas near forest patches.

Net-Map analysis of social relations and motivations

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This year marks a turning point for global development assistance, involved policy makers and researchers. With the transition from the Millennium Development Goals (MDGs), which mainly focused on the 'underdeveloped countries', to the Sustainable Development Goals, which have a more holistic view, globally important issues came back to the political agenda worldwide. The final reports of the MDGs revealed that most targets have not been met within the intended time frame. In particular, many African countries are still affected by extreme poverty, hunger and high infant mortality rates. For instance, the proportion of undernourished people in Sub-Saharan Africa has decreased from 33% in 1990-1992 to 23% in 2014-2016. The current research builds on the large multi-disciplinary Trans-SEC project in Tanzania with the aim to improve the food situation for the most-vulnerable rural poor population by implementing 10 successful food securing upgrading strategies (UPS) along regional and local food value chains. Our specific focus is on four UPS, namely a) maize shelling machine b) millet thresher c) tied ridges and d) optimized market oriented storage. The objective of this study was to determine and understand the role of actors and the interlinkages among the UPS groups; determine the relationship within these UPS group members, between the different UPS groups and other actors; and determine possible success factors for UPS group performance. Research methods used to collect information included individual interviews using Net-Map (Schiffer and Hauck 2010) and focus group discussions. Net-Map a participatory research interview-based mapping tool was used to visualize and understand the power relations, interlinkages among the UPS groups and stakeholder goals which facilitate their knowledge transfer and resource flow. The results increased network understanding by combining attributes of stakeholders, relating to their goals and perceived influence. It further provided the basis for a strategic plan to be developed for further enhanced participation and out-scaling. The enhanced knowledge, resource exchange and information flow from our work led to better coordination and communication between stakeholders; a basis for implementation of the research results at different levels of policy, extension and research for enhanced sustainability; and finally increase long-term sustainability of the UPS.

Spatial orientation in lemurs

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Coordinating travel is important for lemur species living in group. Little is known about the factors that influence the orientation of red-bellied lemurs in natural habitat. By using scan sampling, we collected data on red-bellied lemur's activity and their movement pattern inside their home range in Ranomafana National Park, Madagascar. Additionally, we used botanical plots to gather data on floristic composition. We found that food distribution and plant species diversity were crucial for red bellied lemurs to determine their spatial. This results will allow us to determine the parameter of the viability of the red-bellied lemurs in their natural habitat.

Alternative Investment Models for Wildlife Conservation Project Funding

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Current challenges in conservation management in the Central African context are very particular., and a shift in current funding scenarios is needed. to ensure long term conservation projects. Several new conservation models have been developed and implement over the past decades. Some more successful/impactful than others - however, the conservation patterns that actually do work, seem to be limited and often with a very strong focus on satisfying donor needs. This current poster is to raise awareness in the challenges concerning the current funding scenarios in wildlife conservation projects, and secondly, outline possible new alternative investment models for their funding.

Nutritional composition of the diet of the northern yellow-cheeked crested gibbon

NAVEN HON

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Animals need to balance their diets to meet nutritional needs. This study measured the nutritional compositions of food items consumed by *Nomascus annamensis* in Cambodia. One group was studied; focal animal sampling was used. Sixty-nine different foods were collected for nutritional analyses. The gibbons fed on fruit, young leaves, flowers, mature leaves, and insects. Fruit had the highest concentrations carbohydrates, young leaves had the highest concentration of protein. All food items had similar

concentration of lipid. All plant parts had similar amounts of fibres. This study contributes greatly to our knowledge of the feeding ecology in *N. annamensis*.

Conservation activities for Imperial Eagle in Georgia

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The Eastern Imperial Eagle (*Aquila heliaca*) is classified as vulnerable and decreasing by BirdLife International. Eastern Georgia's steppes form an important breeding and wintering site, holding an estimated 35-50 breeding pairs (Demerdzhiev et al. 2011). The population appears to be limited by a lack of nesting sites linked to the destruction of forest patches. Aim of the conservation project for Imperial Eagle was to increase Georgian population of Eastern Imperial Eagle by increased availability and protection of nesting and potential nesting sites. As a result, project showed that there are only 9 breeding pairs of Imperial Eagle in Georgia, population trend is decreasing and among the different factors which influence on Imperial Eagles population intensive agriculture, reducing riverian forests and competition with White-tailed Eagles (*Haliaeetus albicilla*) are probably the most powerful ones.

Place-based conservation of humpback dolphins

KETKI JOG

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This study employed vessel-based line transects, passive acoustics and interview surveys to study *Sousa plumbea*, an obligate inshore cetacean found along India's coast. It was observed that *S. plumbea* groups (n=142) were sighted within 15m depth, and 2 km from shore. Population size was estimated to be 836 animals (572 marked individuals identified). Echolocation clicks peaked between 2300-0200 hrs. Dolphin-fisheries interactions were common and conflicting. This study identifies a cetacean hotspot in India and provides the basis for a long-term cetacean monitoring program here. This is a prime example where local, place-based solutions could be designed for conservation success.

Issues affecting beekeeping activities in Tanzania

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Beekeeping plays major role in conservation of biodiversity and increasing crop production through pollination. However, increasing production of tobacco farming in Kigoma Region affect beekeeping activity due to massive tree cutting during land preparation and tobacco curing as important bee fodders are also potential for tobacco curing. The stakeholders' threat of the tobacco to contaminate honey was also a challenge observed, though it was found that even other bee fodders like *Brachystegia spiciformis* have nicotine contents. The nicotine content in honey was found not to be detrimental to human beings. The study recommends, best bee fodder tree species should not be harvested to rescue bee keeping activity.

Grassland conservation in East Africa

MERCY KARIUKI

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African grasslands supports many people, through providing grazing for livestock. However, this habitat faces degradation caused by increased human populations and their development activities. Thus threatening grassland biodiversity. Project sites include Kenya's Kinangop grasslands which supports the Endangered Sharpe's Longclaw and Ethiopia's Liben Plains, supporting the Critically Endangered Liben Lark. Methods used involved bird surveys, vegetation quality assessments, stakeholder assessments and questionnaires to provide baseline information. In Kinangop, paddocking and stocking rates had a significant impact on tussock structure, important for Sharpe's Longclaw. While in Ethiopia, communal grazing reserves have supported increased sustainable use of grasslands and provided emergency fodder during the dry season. Management of livestock is important in determining structure and quality of grasslands.

Floodplain Restoration and Biodiversity

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The floodplain of the River Rhône, France has been the subject of a restoration project. I compared restored to non-restored areas of the floodplain to determine the effect of this restoration on birds and butterflies. Overall, I find only a very small effect. This suggests that the type of restoration carried out in this project is unsuitable if the aim is conservation of birds and butterflies.

Large carnivore mortality in Ruaha

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Populations of large carnivores are generally declining and Tanzania's Ruaha landscape is home to globally important populations of the African lion, leopard, spotted hyaena, African wild dog and cheetah. We examined the cause of large carnivore mortality in the landscape to identify areas where carnivore conservation efforts could focus. Their interaction with humans caused carnivore killings for more than 87%, with lions being more at risk than hyaenas despite the latter being more responsible for livestock attacks. Spearing and poisoning were used to kill 2/3 of lions, and primarily as retaliation for livestock losses or cultural reasons.

Ecology of endemic bat *Myzopoda schiemani*

KOFOKY AMYOT FÉLIX

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Daily movement patterns, roost selection and foraging habitats of Malagasy bats are poorly known. We used radio-telemetry to investigate these parameters in *Myzopoda schiemani* in western Madagascar. This species is one of two in *Myzopodidae*, an endemic family and was described in 2007. Thirty-three individuals of *M. schiemani* (17 males and 16 reproductive females) were fitted with transmitters. This is the first time a member of the genus *Myzopoda* has been found roosting in the leaves of the *Bismarckia* palm and these observations allow important inference to be made on the habitat preference and conservation plan of this taxon.

The impact of climate change on the Mediterranean black widow (*Latrodectus tredecimguttatus*)

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The climate is changing rapidly and the negative effects on the living beings can already be seen. One of the species that could be majorly influenced is the Mediterranean black widow, a venomous species of medical importance. The changing environment could induce the shift of the species range northwards, introducing a new poisonous animal to areas where it was not present before. At the same time the changing climate may potentially endanger the black widow at its current distribution range in the near future, due to its limited dispersal capabilities and narrow ecological niche.

Orthopterans in alpine grasslands

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Within the last 30 years the quality of the rare species rich Nardion grasslands decreased although these grasslands were extensively managed. To find explicit management factors leading to this degradation I surveyed vegetation and orthopterans as indicators for multi-trophic biodiversity. The orthopteran species richness and abundance are higher in pastures than meadows and connected to this, they are positively influenced by increasing vegetation structure and insolation. In contrast to plant species richness, orthopteran species richness and abundance are lower in high quality Nardion grasslands. This is mainly caused by the fact that orthopterans dislike the tough grass *Nardus stricta*.

Evolution of a Transmissible Cancer

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The Tasmanian devils, the world's largest carnivorous marsupial, are currently threatened by a contagious cancer known as the Devil Facial Tumor Disease (DFTD). Since its discovery in 1996 in the north eastern region of Tasmania, DFTD has led to severe local population declines of Tasmanian devils across Tasmania. Using next-generation sequencing, we are able to trace how this transmissible cancer has spread and evolved across the span of nearly two decades.

Snow leopard conservation in China

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Due to high reproductive ability and adaptability, free-ranging dogs potentially have a negative influence on snow leopard, a really endangered species in Sanjiangyuan Region, China. My study aims to assess the ecological role played by free-ranging dogs, and their competition with snow leopards. Mark recapture is used to calculate abundance and density. GPS collars and camera traps are used to acquire home range and activity pattern information. Fecal analysis is used for diet and parasites studies. Preliminary results of abundance and body size showed free-ranging dogs might be strong competitors, results of home range and activity pattern already showed overlap.

Conservation in Nature Improvement Areas

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This research evaluates the effectiveness of the NIA initiative in achieving both its nature conservation and ecosystem service (ES) delivery goals. It specifically evaluates whether or not the NIAs provide “win-win” opportunities that offer multiple benefits for both biodiversity (BD) conservation and ES delivery. Results suggest that designated areas such as the NIAs can benefit BD and improve ES delivery in certain cases but concurrence cannot be assumed and must be tested empirically. Many factors influence the potential success of strategies, from the establishment of areas to the management strategies employed.

Incorporating behaviours to GPS tracking

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GPS tracking provides information on the locations of individual animals, and by inference, the habitats they rely on. Yet, the presence vs. absence representation fails to capture the behavioural mechanisms that drive habitat choice. Here, we develop a novel method for the analysis of behaviour-specific habitat selection using data from 12 Little Bustards (*Tetrax tetrax*) fitted with GPS tags and accelerometer sensors. We found that taking account of behaviour revealed habitat preferences that went undetected by the conventional location-based model. Such deeper understanding of habitat choice can help guide management interventions aiming to support key functions for the species' survival.

Fire effects to forest birds

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The study assessed the effect of fire on understorey birds at Eastern Arc Mountains Forests, West Usambaras (Magamba Forest Nature Reserve), July 2015 to January 2016, five years post fire. Mist nets were used to survey birds in burnt and unburnt forests. Bird species composition between burnt and unburnt forests differed significantly with high diversity in burnt area. Endemic and forest interior bird specialists e.g. Usambara Akalat noted to avoid burnt areas. The burnt areas are being invaded with an exotic invasive Australian plant species, *Acacia melanoxylon*, which continue to change the habitat structure and escalate the fire regimes.

Environmental correlates of livestock depredation

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We conducted a survey to understand the environmental correlates of livestock predation by spotted hyenas in a communal landscape far from protected areas. We used Maximum Entropy modelling to predict occurrence of kill sites using GIS derived distances from hills, homesteads, roads, tracks, streams and the NDVI. Distance from homesteads was the most important predictor of kill site occurrence (85.8%). A plausible explanation is that kraals are usually located at short distances from homesteads. Hills and streams become important at intermediate and larger scales, probably as habitats for hyena rather than hunting ground.

Finding the needle in the haystack: evidence for the effectiveness of a complex conservation intervention

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Systematic conservation planning (SCP) approaches are widely applied in the design of protected area networks globally, however evidence of their effectiveness is limited. We conducted an extensive literature review on the effectiveness of systematic conservation planning interventions and emerging evaluation approaches. It appears that unintended social, financial and institutional outcomes are frequently reported consequences of planning, whereas the desired biodiversity conservation outcomes are harder to account for. This review will spark much needed debate on priorities within the discipline for it to have greatest impact on directing global conservation actions.

Can native species control invasives?

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Studies in Ireland suggest the native pine marten (*Martes martes*) negatively impacts invasive grey squirrel (*Sciurus carolinensis*) populations. Existence of an interaction could have major ramifications for the forestry sector and their approach to grey squirrel control. This project aims to study this interaction further during a pine marten reintroduction project in mid-Wales. Translocated pine martens and resident grey squirrels have been tracked using GPS loggers and telemetry to establish habitat preference, home ranges and reveal any potential spatial interactions. In

addition, the behaviour of squirrels is being studied to establish if movement is governed by a landscape of fear.

Bulbuls-life history evolution

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The breeding and ecology of the three sympatric Bulbuls observed for the past three seasons (2013-2015). The methodologies such as systematic nest search, direct & camera surveillance to record parental activities, predator surveys with artificial nest experiments, food availability, vegetation structure and climatic data during the breeding season were employed. During the period, 137 nests of *Acritillas indica*, 152 nests of *Pycnonotus jocosus* and 104 nests of *Hypsepetes leucocephalus* were monitored and analysed various life history parameters. The breeding season, pattern, success of the clutch etc were showing correlation with biotic and abiotic environment and ultimately influencing the surviving population.

Foraging in the Fynbos heat

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The physiological consequences (e.g. energy and water demands) of sexually size dimorphic species are poorly understood. We predicted that the smaller sex should show greater foraging effort during hot days, to meet their higher mass-specific energy and water demands. We determined if a Fynbos endemic, the Cape Sugarbird (*Promerops cafer*)—males are up to 15% larger than females, show sex-specific foraging patterns. We compared flower visitation rates between males and females at different times of the day. The results suggest that females will be more prone to energy and water stress during hot and dry summers in the Fynbos region.

Maximizing impact of conservation actions

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The difference made by protected areas is their impact, defined as the outcomes arising from protection relative to the counterfactual of no protection. We aimed at designing high impact conservation actions that minimize vegetation loss while retaining sites with high plant biodiversity value threatened from climate change in the Brazilian Cerrado. We

quantified the likely amounts of avoided deforestation delivered by two intervention scenarios differing in allocation of efforts through time (present until 2050): all at once today and 5-year interval implementation. Gradually investing conservation actions delivered greatest avoided deforestation compared to targeting all remnants for protection at once today.

Conservation of *Kohautia amatymbica*

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Kohautia amatymbica is a common wildflower in South African grasslands. This study was conducted in Pietermaritzburg, to determine its breeding and pollination systems, the effects of grassland management on population size and the Allee effect. Results established that *K. amatymbica* is self-incompatible and not autogamous. It is night pollinated by moths. Its flowering individuals were most abundant in plots that had been mowed in the wet season, and burnt during the first week in August. The plants experience a component Allee effect, with plants in dense patches experiencing higher fecundity. These results increase our understanding of wildflowers in grasslands.

Community Based Ecotourism projects (CBETs)

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The success of CBETs on biodiversity conservation and community livelihoods is largely unknown. To evaluate CBETs a thorough literature review was conducted on studies done previously in Kenya. In addition key stakeholders (n=10) were purposively selected and interviewed. The CBETs earn between 48257.89US\$ to 144773.67US\$ from ecotourism annually. The benefits reported include physical security, community projects and increase in household income. Vegetation cover was also reported to increase significantly. Community projects supported by CBETs are linked directly to community development. CBETs are also successful in enhancing conservation but more research is needed to evaluate their impact on wildlife abundance.

Crop raiding by gorillas in Rwanda

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In areas around Volcanoes National Park, there are indications that the frequency and duration of time that gorillas spend outside of the park is increasing and this creates a serious conflict in terms of crop damage. Four years data on the frequency of mountain gorilla ranging outside the park and activities they are involved in when they range outside were recorded for nine gorilla groups using the ranger based monitoring method. Six variables were tested as indicators of the intensity of damage: occurrence, seasonality, and distance from the park boundary, time spent outside, plant species eaten and activity budget when gorillas are outside the park. Additionally a survey was conducted in five villages bordering the home range of the studied groups to assess local perceptions and conservation implications of gorilla crop raiding in the area adjacent to the VNP. Frequencies of mountain gorillas outside of the park have shown an annual mean increase for the last 4 years, ranging from 54 cases in 2008 to 137 in 2011. The time spent by gorillas outside increased every year with the peaks in October – November. There is also an increasing problem of conflict with local people due to the extent of crop damaged.

Long term impact of livestock grazing in the Succulent Karoo: a 20-year overview

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Land-use and change in species biodiversity correlate throughout the world. Overgrazing changes the vegetation structure of arid and semi-arid regions, often causing extinctions of species. It also causes changes in soil nutrient dynamics (e.g. a reduction in soil fertility), plant species composition as well as in the recruitment of unpalatable species. In Namaqualand, South Africa, the long-term impacts of overgrazing are not clear. The main objective of this study is to investigate changes in the vegetation structure of overgrazed communal land and lightly grazed private land over the past 20 years. I will compare and contrast vegetation cover and species composition data for the year 2016, with data from two similar studies carried out in 1996 and 2006 by Todd and Hoffman. This long term-study will highlight the conservation status of the rare succulents in this biodiversity hotspot and the potential threat posed by heavy grazing. People from Namaqualand are in the process of on-going land re-distribution and this study will therefore form an important baseline for land reform policy and will highlight the potential consequences of heavy grazing on the vegetation of the region.

Wildlife abundance and Trypanosomiasis in cattle

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The Maasai Steppe ecosystem hosts significant populations of wildlife and livestock, potentially facilitating the transmission of vector-borne diseases. This study aimed to identify the influence of wildlife abundance on Trypanosomiasis prevalence in cattle in 3 villages within the Steppe. Transect-point sampling was used to assess wildlife abundance. Blood samples were collected from 150 cattle and a nested PCR was used to detect Trypanosome species. Prevalence within the villages ranged from 20-16% ($P=0.135$), and wildlife relative abundance also did not differ significantly ($P=0.412$). Lack of significant results could be due to a single sampling period, and may change with additional sampling.

Trade-offs of voluntary nature conservation

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The aim is to study, what are biodiversity effects of voluntary nature conservation, and compare costs of voluntary conservation to those of statutory conservation programs. The hypothesis is that voluntary conservation fails to protect biodiversity with scarce conservation resources because voluntariness may require more resources than statutory programs. This is likely because when landowners are allowed to refuse to protect their lands, some of the most valuable sites will stay outside legal protection. Corresponding biodiversity values cannot be protected simply by conserving the same amount of area from somewhere else, but instead by conserving larger area which is more expensive.

Rainforest primate abundance and richness

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Over 18 years we collected data on the species richness and abundance of primates in 26 sites of the Peruvian amazon rainforest using line transect surveys. These data were analysed using distance sampling analysis. Species richness and abundance were lower on land used for logging and Brazil nut extraction. There was no significant difference between conservation concessions and eco-tourism concessions, indicating the importance of maintaining intact forest. Long term studies measuring the effects of land use methods on wildlife is relevant to areas outside of Peru

and is a current issue affecting conservation efforts as global demand for resources increase.

Modelling the effects of fencing

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Fences are often used to minimise interactions between humans and wildlife. Understanding the impacts of fencing is important to ensure threatened species are not negatively affected by them. The effects of increased fencing on cheetah energetic requirements were modelled using Laikipia County, Kenya as a case study. The model showed that increases in fencing have the potential to significantly increase cheetah energetic requirements. Whilst fencing can be an important tool for conservation some species, particularly cheetah and other wide-ranging large carnivores, may be at risk from a combination of an increase in energy requirements and reduced access to resources.

Gaps in Natura 2000 research

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Natura 2000 (N2k) is a multinational conservation network designated to support long-term survival of Europe's most valuable species and habitats. We reviewed 510 peer-reviewed publications about N2k's ecological aspects categorized by spatial scale, biogeographical regions, taxonomic groups, and habitat types. Most studies were performed at a subnational region; were from the Mediterranean region; addressed plants; and grasslands, freshwater, wetland habitats. Future N2k research should focus on the Boreal region; alpine, agricultural, forest and marine habitats; reptiles, amphibians, lichens and fungi. More studies should encompass large spatial scales and utilize modelling to effectively address future climate and land-use changes.

Tayassu pecari movement patterns

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Landscape structure (e.g. habitat amount and configuration) have been hypothesized to drive movement patterns of white-lipped peccaries. Thirty individuals were tracked in Mato Grosso do Sul state, Brazil, between 2013 and 2016. Using the squared displacement modelling approach combined

with home range analysis, we found individual variation in movement patterns and space use. Building upon this new understanding our next step is to evaluate if there are thresholds of habitat loss and fragmentation that might impact this species. These will provide conservation relevant information to identify corridors for species that depend on conserved areas to forage and disperse.

Chimpanzees manage risk for mangoes

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Chimpanzees are ripe fruit specialists and eat mangos wherever they are grown in their habitats, although entering gardens presents a potential risk for both chimpanzees and humans. Understanding mango feeding behaviour is important to designing strategies mitigating negative human-chimpanzee interactions. Sixty-seven mango trees were monitored for feeding traces daily during peak season. For each tree, factors related to degree of risk and tree characteristics were recorded. Chimpanzees showed preferences for different varieties and consumed more mangos closer to the forest edge and from “low-risk” trees, with terrestrial vegetation cover and no guard, factors which could inform future land management strategies.

Jaguars in multi-extractive tropical forests

MESHACH PIERRE

N/A

Jaguars still appear common in Guyana due to large tracts of natural habitat. Nevertheless, the country is experiencing growing land conversion due to stacked land-use types – forestry, mining and hunting. To understand jaguars’ response to this land-use, we conducted a camera trap study in a long-term logging and mining area. We estimated very low jaguar density and low prey abundance compared to other sites in Guyana. However, we also detected threatened disturbance sensitive species, such as white-lipped peccary (*Tayassu pecari*) and giant armadillo (*Priodontes maximus*). Our results illustrate the gap in the understanding of predator-prey interactions with human land use.

Epiphytic bryophytes and forest structure

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Logging activities continue to threaten the cloud forests of tropical Andes. Yet, by supporting exceptional biodiversity and ecosystem services, cloud

forests represent a conservation priority. Abundant epiphyte flora is a functionally important characteristic of these forests. We studied the effects of logging on epiphytic bryophytes. Based on a vegetation survey in primary and secondary cloud forests of Northern Peru, tree density and basal area are good indicators of the degree of human disturbance. The biomass of epiphytic bryophytes decreases as forests become more disturbed. Associated changes in the community composition suggest that bryophytes respond to altered microclimatic conditions following logging.

Quantifying carbon storage in Thailand

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Tropical forests can absorb more carbon than any other forest type. But Thailand lacks proper tools and optimal equations to quantify its valuable carbon stocks, especially for hill evergreen forests. This research will provide new allometric equations for secondary hill evergreen forests to accurately estimate tree biomass and carbon sequestration, add wood density data of several species missing from the Global Wood Density Database, and may be used to prepare baseline data for Thailand's carbon stocks for the REDD+ and carbon trading schemes. These will provide monetary incentives to stop illegal logging and deforestation for corn cultivation in Thailand.

Estuarine restoration and ecosystem services

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In 25 years, Nerbioi estuary shifted from degraded status to near-recovered status. Biotic and abiotic data show ecological improvement, but is still unclear if the delivery of cultural ecosystem services (i.e. recreational fishing) has improved. A questionnaire was used to study fishers' perceptions and compare with ecological data. Results show a positive correlation between ecological spatial recovery and the expansion of recreational fishing to the inner part of the estuary. However, fishers' perceptions do not always correspond with demonstrated recovery. This study concludes that a better functioning environment has the potential to deliver ecosystem services and to improve human well-being.

Climex Analysis of *Bactrocera passiflorae*

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Fruit fly pests of the *Bactrocera* genus harm horticulture industries worldwide, especially small island countries. The CLIMEX 4.0 software was used to create a Genetic Algorithms model to map the current and future distribution of the Fijian fruit fly (*Bactrocera passiflorae*). The results show that by 2100, climate change will make countries like New Caledonia and New Zealand suitable for new incursions while only a single island on Fiji will remain suitable as a native habitat. Such evidence could inform biosecurity policies and trade regulations against new *B. passiflorae* incursions and in conserving the species in its native range.

African wild dog mortality

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Increased human mortality at high temperatures has long been acknowledged within the sphere of human health, but there has been little research into similar impacts on wildlife. Here we present the first evidence for increased mortality at higher temperatures in a tropical mammal, the African wild dog, using data from a long term field study in Kenya. Wild dog survival is affected by pack size and land use, and dogs have lower probability of survival at higher temperatures. This decrease in survival at high temperatures provides a novel challenge for climate vulnerability assessments and wild dog conservation under climate change.

Primate monitoring at Mamirauá Reserve

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Here we established a baseline sighting rate for four primate species and examined their population status over four years of monitoring. We surveyed species at Mamirauá Reserve: a protected flooded forest in Central Amazon. We used analysis of variance to test if there was any significant variation in sighting rates between monitoring years. Three species presented positive trends in the sighting rate, whereas the fourth one did not differ significantly between years. Mamirauá's primate species are either endemics or susceptible to hunting. Despite these threats, the positive trends of their population suggests that the reserve is effectively conserving these species.

Indonesian students and local wildlife

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Indonesia is a wildlife trade hotspot, and many species openly traded in markets are protected. As wildlife trade is one of the biggest threats to species conservation, it is important to understand why people interested in buying wild animals believe them to be suitable pets. This study focused on Indonesian students' knowledge, attitudes towards, and perceptions of slow lorises, palm civets, leopard cats, and flying foxes. Results reveal many between-species differences, both in how desirable they are as pets, and why. This information will be used to design conservation education workshops for university students across Java.

Life history of *Phelsuma klemmeri*, the Neon day gecko

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Conducting research on the Neon day gecko (*Phelsuma klemmeri*) in its new locality is a prerequisite to assessing population status and proposing conservation measures. Transect surveys and bamboo excavation provided information on population structure, daily activity pattern and microhabitat use. Species abundance was positively correlated with the number of dead bamboos. The bimodal pattern of activity constitutes a behavioural thermoregulation. Predation could be a determinant factor of microhabitat use. These results confirmed the importance of bamboo patches for this endemic and endangered gecko. However, this gecko is highly threatened due to direct extraction of bamboo for human use.

Feeding ecology of the Malagasy mongoose (*Mungotictis decemlineata*)

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Different families in the mammalian order Carnivora exhibit much size-related variation in diet and activity. Most members of the Herpestidae and Eupleridae are generally known to specialize in an insectivorous diet and to be opportunistic generalist. Yet, the feeding ecology of Malagasy mongooses is poorly known compared to African mongooses. Here we provide a detailed data set, to fill this gap, on the feeding ecology of the elusive forest-dwelling *Mungotictis decemlineata*. We investigated on the seasonal variation on its diet and foraging patterns in Kirindy/CFPF, a forest under strong seasonal variation located in the central western region of Madagascar. From May to August 2013 and from January to March 2015,

we collected data by using a combination of fecal analysis and behavioral observations. A total of 420 food items from 22 different species were detected in the 63 fecal samples. The present study revealed that *M. decemlineata* relies on a wide variety of food items, but its overall diet is dominated by arthropods and insect larvae. *Mungotictis decemlineata* responds adaptively to seasonal variation in prey abundance, which contributes to reduced foraging costs, and the nature of their most common prey may facilitate the formation of female groups.

Coexistence with aquatic predators

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Communities in the Peruvian Amazon coexist with aquatic predators that are perceived as competitors for fish and net damagers. Recent recovery of giant otter populations has led to increased encounters with fishers. To compare perceived damage to nets with actual damage, I interviewed people in communities around the Pucacuro National Reserve and used participatory registers for net-damage. People ranked otters as the most damaging to fisheries and nets. However, in 280 events of net damage registered by fishermen, just seven were by otters. Predominantly negative opinions towards otters are based on exaggerated accounts of net damage relative to other species.

Conservation through natural sacred sites

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Traditionally well-managed sacred sites offer alternative perspective on ecological conservation. In order to understand this importance, we observed 32 hieratic places in Mount Lawu and recorded 63 tree species in the whole area. About 10% of the species were old big tree and more than one-fifth were considered rare by local community. Most of the old big tree have tremendous role in ecology and society, they maintain water resources, provide refugee for many animals and also socio-economically benefit for community. Our findings suggested that natural sites that considered sacred by local community have a significant role in the conservation issues.

Conservation of Nardion grasslands

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In the Swiss Pre-Alps, the rare “species-rich Nardion grasslands” have decreased during the last 30 years. Although these grasslands are under

protection, the reasons for the degradation are unknown. The aim of the study is to identify main causes for the diminishing plant diversity and shift in plant community in such grasslands. I found that management practise have a big influence on the plant community of Nardion grasslands. Mowing is conserving the typical plant community better than grazing. Regarding pastures, the number of grazing periods and the length of grazing are crucial factors.

Predator-prey relationships of wolves

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Wolves recolonizing the canton of Valais (Switzerland) generate lots of conflicts with local communities. To predict future conflict zones, we wanted to understand how ungulate densities influence habitat selection by wolves. We obtained ungulate estimates by snow-tracking surveys, and wolf presence data from a national monitoring network. We predicted relative ungulate densities for Valais, then built spatially explicit wolf habitat selection models based on ungulate densities and other environmental factors. Red deer abundance was the most important predictor for wolf occurrence, followed by precipitation and distance to lakes. These results will help predicting the further spreading of the Valais wolves.

Forest Cover Change & Carbon Modelling

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The Rwandan Protected Areas are still threatened by human activities due to high population density and high poverty rate. Thus, presented in this paper is a multi-temporal assessment of the Nyungwe montane rainforest, by using remote sensing technology combined with Light Use Efficiency model. Indicators such as daily canopy cover, Net Primary Productivity and carbon sequestered from 1986 to 2010 were calculated. Natural factors like topographic and climatic conditions suspected to be associated to this degradation were investigated. This study provided the clear message to the Nyungwe manager and government about the over-time perennial degradation.

Microplastic consumption by shorebirds

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Microplastics are ubiquitous in marine and coastal environments. We investigated microplastic in three intertidal habitats (Tejo estuary, Portugal; Banc d'Arguin, Mauritania; and Bijagós archipelago, Guinea-Bissau) focusing on shorebirds (examining faeces but also some stomach samples), on the main macroinvertebrate species they prey upon and on the sediments of their intertidal foraging areas. All microplastics found were fibers. Our analyses evidenced high levels of microplastic pollution in all studied areas. Microplastic densities in sediment were lowest in the Banc d'Arguin, while concentrations in shorebird and macroinvertebrate samples tended to be higher in the Tejo estuary, the site under heavier human influence.

Fish beta-diversity of Central India

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Impacts of flow regulation are major problem for aquatic communities across the world. An understanding of the processes that maintain regional fish diversity in varying flow regimes is needed, which considers the compositional differences between local communities. We sampled and collected seasonal fish community and environmental data at 18 sites. Dissimilarities between assemblage compositions were partitioned, and illustrated using SDR simplex (similarity, abundance difference and replacement). Our result indicated that at spatio-temporal scales, intermittent and regulated sites were more heterogeneous than perennial sites. Moreover, beta-distances between sites were predicted by water conditions at both spatial and temporal scales.

Inter-community resilience and forest conservation in western Zambia

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At community level, forest conservation are quite complex considering the inter-community dynamics that have been shaped by political and economic transformations of power devolutions to the communities. Forest resource management requires adaptive global governance systems and successful integration through multi-level governance. The aims of this study were to examine dependency on forest products and to investigate natural resource governance alternatives that enhance prosperity options for local communities. The study concludes that integrated pathways to

prosperity for local communities could comprise modified governance of forests that include novel modes of reconciling traditional governance institutions and practices with the Monitoring, Reporting and Verification requirements of international expectations under UN-REDD.

Modelling multi-host pathogens for conservation

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Multi-host pathogens have been implicated in extinctions and population declines in a range of taxa. Interspecific transmission between host populations allows the pathogen to persist even as one host is driven to extinction. Modelling is invaluable tool in addressing the threat posed by pathogens to biodiversity, providing an inexpensive, a priori assessment of the strategies available for the management of multi-host pathogens in threatened wildlife. However, this requires a robust understanding of the ecology of the hosts and the pathogen, data with which to parametrise the model, and incorporation of the model into a framework for conservation decision making.

Corporate Reporting about Biodiversity Conservation

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Many businesses use sustainability reporting to communicate their conservation efforts, but it is difficult to tell how accurate these reports are. Combining a document review, interviews and site visits, I examined the cases of forestry and salmon farming in Chile to see how closely reports match reality. Corporate reporting has a light and a dark side: it can highlight good practice, but reports can also be used to deflect or dampen criticism, ultimately hindering conservation efforts. My results highlight the possibilities and limits using corporate reports to map conservation efforts by business, and point towards alternative approaches to aid accountability.

Habitats and restricted range birds

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The quality of habitats determines the occupancy and distribution of restricted-range bird species in Coastal forests of Kenya. The study aimed at revealing habitat characteristics that influenced birds' occupancy in five fragmented coastal forests. Point count method was used to record bird

numbers at random points, and bird abundance was related with habitat characteristics at each point. Only 14 out of 29 East African restricted range birds were recorded in the five forests. The abundance of five forest specialist birds, three forest generalists, two forest visitors and one non-forest bird was found to be influenced by forest complexity features.

Cancer Genomics of Tasmanian Devils

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Tasmanian Devils are the world's largest carnivorous marsupials, providing valuable ecosystem functions within their endemic distribution area, the Australian island state of Tasmania. At least two outbreaks of Devil Facial Tumour Diseases (DFT1 and DFT2), transmissible clonal cancer lineages, have led to substantial population declines since the mid-1990s. We have extensively compared the genetics between contagious tumour cells and healthy animals through a next-generation DNA sequencing approach, which addresses fundamental questions of both cancer research and future Tasmanian Devil conservation.

Surveying Data Deficient Mammals

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One in six species are currently classified as Data Deficient (DD) on the IUCN Red List. Many are likely to be at risk of extinction but they are typically excluded from conservation prioritisations and funding schemes due to their uncertain conservation status. To enable strategic allocation of funds, we estimated the cost to find and survey the 493 mammal species listed as DD. We estimate the total cost to reassess DD mammals ranges between U.S \$7.22 - \$18.63 million. By explicitly defining the likely survey costs for each DD species, we can make informed decisions over how to spend conservation budgets efficiently to maximise reassessments.

Multi-patch protection of habitat networks

JULIANA SZABO

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Habitat connectivity is a major concern in biodiversity conservation, and its maintenance requires the selection of priority habitat patches to be protected. Network analysis offers tools for the identification of the patches that most contribute to connectivity, generally through evaluating patch importance individually. However, the individually most valuable patches may differ from the ones that together best contribute to connectivity. We

apply and compare the Probability of Connectivity (single-patch) and two KeyPlayer (multi-patch) methods in the selection of key patches in the habitat network of 20 bird species in Catalonia, and assess their inclusion in the Natura 2000 network.

Hoverfly diversity in farmland landscapes

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Many farmland landscapes are homogeneous which affects negatively pollinator species richness and causes population declines and even extinctions. This can already be seen as an alarming decline of bees throughout the globe. My poster addresses, how landscape structure (i.e. the diversity of land use types) affects the hoverfly diversity in caraway fields in Finland. I collected pollinators in 22 caraway fields by using pan traps. I counted ca. 3000 individuals and identified over 100 species of hoverflies. My hypothesis is that heterogeneous landscape affects positively the hoverfly diversity.

Age-related parameters in amphibians

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We used skeletochronology to investigate age-related parameters (average lifespan, age at sexual maturity, longevity and potential reproductive lifespan) in a *Pelobates fuscus* population that reproduces in a permanent pond in the vicinity of the town of Cluj-Napoca, Romania. The quality of the aquatic and surrounding terrestrial habitats decreased during the study period due to urban development. No significant differences in age-related parameters over time were found. Our results suggest that the studied population did not adapt to the human impact affecting its habitat, indicating a lack of response that could explain the severe decline of the species over its range.

Effect of ROS-generating agents (H₂O₂) on the growth of *Pseudogymnoascus destructans*

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White-nose disease is an emergent infectious disease that has killed over 6 million bats in less than 10 years in the eastern USA and Canada. The disease is caused by a recently introduced fungal pathogen,

Pseudogymnoascus destructans, affecting the skin of hibernating bats. We investigated the effect of ROS-generating agents (like H₂O₂) on the growth of *P. destructans*. Our results show that *P. destructans* have high tolerance to H₂O₂ and the spores can survive treatment with extremely high concentrations similar to those encountered when developing inside of the host and being exposed to the host's immune system.

Nomascus nasutus re-discovery and conservation

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Hunting and habitat loss have led to biodiversity decrease in Vietnam. By the late 1990s, *Nomascus nasutus* was thought to be extinct. The poster presents information on the species' rediscovery in 2002, its status, and ongoing conservation efforts. The nation-wide survey involved a literature review, interviews, and field surveys (acoustic/direct observation). We report that the species persists in only one viable population within its historical range. The ongoing conservation work consists of an awareness/education campaign, creation of a protected area, and establishment of community led patrols. Our data suggest that community-based protection can be a major asset to gibbon conservation.

Carnivore monitoring outside Indian PAs

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In India, conservation efforts are focused on large protected areas (PAs) and areas outside the PA network are largely neglected. However, recent studies show the importance of connectivity in maintaining long-term viable tiger populations. Our work focuses on developing effective large carnivore monitoring in such corridor areas within human dominated landscapes. We used spatially-explicit capture-recapture method to estimate the density of large carnivores in central India. Our findings show that large predators are present in densities higher than in some Tiger Reserves across the study area, emphasizing the urgency to develop conservation and management strategies for these corridors.

Nest-site choice in disturbed forests

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Sudden environmental changes, often human-induced, can alter historical selection pressures to which animals are evolutionary adopted. In the case of birds, previously successful cues for nest-site choice might become disadvantageous. Here I present results on nest-site choice and reproductive success of an Afrotropical understory passerine, the Placid Greenbul (*Phyllastrephus placidus*). I quantified this in two forest fragments differing in level of disturbance and found that birds choose different cues in each fragment, but always preferred pristine sites within each fragment. Contra intuitively, this did not relate to reproductive success, suggesting that Greenbuls might be maladapted to current prevailing selection pressures.

Underestimated diversity of fan-throated lizards

DEEPAK VEERAPPAN

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Grasslands are among the most threatened ecosystems in India. Fan-throated lizards (FTL) are small, terrestrial agamids distributed in grasslands across the Indian subcontinent. The objective of this project was to uncover the hidden diversity of FTL in India. DNA was extracted from tissue samples from individuals across its Indian range (108 locations) between 2013 -2016. One mitochondrial and three nuclear genes (3130 bp) were sequenced. Three phylogenetic species delimitation methods were used to delimit species. Totally 15 FTL were delimited out of which 11 are new to science. Fine-scale mapping will inform IUCN conservation status for all newly recognized species.

Digital assessment of ecosystem services

FELIPE ALEXANDRE SANTOS VIEIRA

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We analyzed the content of all photos published on the social media Flickr® from 105 State parks and 104 Federal parks within the Caatinga eco-region. Photos were extracted from the web through an automatized geographic search using a set of custom R scripts. The search returned 5,470 images from 58 PAs, of which 4,121 had content that represented some type of CES. 'Aesthetic Value' (N = 2,486) and 'Recreation' (N = 1,243) were the most represented categories. There was also a high number of

users contributing photos representing social activities and sporting recreation (N = 1063; N = 180).

Human impact on Chinese biodiversity

BINGXIN WANG

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As humans encroach in previously remote natural habitats in China, there is need to understand and manage ensuing impact on wildlife. Few analyses have thus far comprehensively examined the stress on wildlife by human activities thus confounding efforts to manage it. We used camera-trap data to examine the mammalian and avian diversity and activity patterns in China's Houhe National Nature Reserve. Our findings on 48 species provide baseline data on the effect of humans on these species, and will help the development of long-term conservation monitoring and protection management plans.

Participation in protected area governance in Madagascar

CAROLINE WARD

Sustainable Research Institute, University of Leeds

Communities are increasingly engaged in protected area (PA) governance, aiming to provide socio-economic and biological benefits. This study utilises the Theory of Planned Behaviour (TPB) framework to understand PA governance participation in 3 villages in Madagascar. Individuals who were male, used more forest resources and had a positive attitude towards participation were most likely to participate. On the other hand, participation was limited by a lack of knowledge and miscommunication. These results highlight the importance of effective and inclusive communication in conservation governance, particularly in remote areas, in order to promote participation and ensure it can fulfil its aims.

Geographical Indications and Environmental Conservation

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Geographical Indication (GI) identifies a product as originating from a region where its quality and characteristics are attributed to its geographical origin. Arid and Semi-arid areas in Kenya are characterized by low rainfall, food insecurity and poverty thus a threat to natural resources. GI generates additional income which forms an incentive to preserve the resources. Initiatives of beekeepers and other stakeholders in production of potential GI honeys were assessed. Data was collected through household

surveys, focus group discussions and key informant interviews. Results showed that production of potential GI honeys contribute to environmental conservation.

Steppe-land birds and ecological traps

MASOUD YOUSEFI

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Conserving biodiversity in agro ecosystems is challenging task especially in developing countries. I used Maxent software to develop habitat suitability models for Little Bustard and Asian Houbara Bustard in Iran. An overlay of habitat suitability maps of the two species with agricultural land showed, 30% of their suitable habitats are within the agricultural lands. These agricultural lands act as ecological traps for the bustard's populations, leading the bustards to high-risk areas where they might be in danger of being hunted. It would be necessary therefore to prevent further expansion of agricultural lands in the bustard's highly suitable habitats.

Seed dispersal effectiveness by rodents

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We conducted seed dispersal experiments on 21 islands of various areas and three mainland sites in Thousand Island Lake (TIL) China, a land-bridge island system created by dam constructions, based on the acorn (*Quercus serrata* var. *brevipetiolata*)-rodent conditional mutualisms. Our results showed that rodents played an important role on the seed dispersal process and habitat fragmentation indeed affected the seed-dispersal patterns and decreased the seed dispersal effectiveness significantly in our study system. These changes would further affect individual regeneration that may alter the population structures of *Q. serrata* var. *brevipetiolata* on islands.

Notes