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Community conservation: a glimmer of hope for protected areas in DRC?

The Democratic Republic of Congo (DRC) featured many times in the international media last year but for all the wrong reasons: war, deaths, displacements, poverty, and also for the killing of mountain gorillas in the east of the country. It started in January 2007 when it was reported that two silverback gorillas had been shot and eaten by a rebel group in the Virunga National Park. Unfortunately, this was only the beginning; more deaths followed in May (one female leaving behind a juvenile now being hand-raised), July (three females and a silver back alpha male plus another female and her 4 month-old juvenile, later found dead), amounting to the loss of 10 mountain gorillas. In August 2007 an emergency plan was put in place by the International Gorilla Conservation Programme (IGCP), with other stakeholders, under the leadership of the protected areas authority (Institut Congolais pour la Conservation de la Nature, ICCN) that worked towards a community sensitization programme, patrol rations and field equipment. However, due to continued fighting between rebel groups and government troops in the Park, some of the emergency plan's activities, such as the Park patrols and the community sensitization programme, have not yet been implemented.

As a consequence of the civil war the main challenges to the conservation of biodiversity and natural resources in DRC seem vast: major difficulties faced by the institutions responsible for the management of wildlife and natural resources; illegal exploitation both for commercial interests and subsistence demands; absence of law and order; lack of involvement of local communities in decision making over access and sharing of benefits from biodiversity and natural resources; and inadequate, outdated or conflicting policy and legislation on wildlife and biodiversity conservation. Nonetheless, Fauna & Flora International saw this as an opportunity and launched the FFI DRC Programme in January 2007. Drawing on the experience gained from over 30 years of involvement with IGCP, and in post-conflict Liberia, our plan of action includes: strengthening the protected areas' capacity for community-based conservation; developing and implementing community-based conservation activities; promoting and disseminating knowledge and improve understanding of local value and dependence on biodiversity and natural

resources; promoting and improving the awareness of local communities regarding their land and civil rights; strengthening the design and implementation of wildlife policy and legislation; and engaging with the private sector to mitigate the impact it may have on biodiversity, and to contribute to the socio-economic development of local communities.

Fortunately, not all news coming from DRC is negative. With stability returning to the majority of the country, and a new government, some positive steps were made last year. The ICCN has been closely collaborating with FFI to develop the first ever national-level community conservation strategy for the country. This strategy provides a framework for the development of specific park-focused conservation strategies and activities including successful approaches that can be replicated across all protected areas. These approaches were designed by drawing on existing successful community-conservation structures, as found in Garamba National Park where FFI has helped to develop mechanisms for engaging local communities in Park management and reducing conflict in and around the Park. These mechanisms will be replicated in other protected areas while taking into account the local contexts of each area. As this conservation strategy was community-based, a bottom-up approach was used where local communities living in the vicinity of eight protected areas were consulted and requested to identify issues they felt needed to be addressed. The issues included the lack of engagement of local communities in protected area management, lack of access to natural resources within protected areas, poorly defined protected area boundaries, and human-wildlife conflict, including crop damage and the lack of revenue-sharing between protected areas and local communities. These issues now form the main strategic objectives of a strategy aimed at engaging local communities in wildlife conservation and ultimately resolving conflict issues and reducing the pressure exerted by communities on DRC's protected areas. The ICCN, during the national workshop for the validation of the community conservation strategy held in November 2007 in Kinshasa, pledged to increase the percentage of revenue sharing benefiting local communities from 3 to 40%.

In addition to the community-conservation strategy, FFI also collaborated with the World Bank and the United Nations Development Programme to revise DRC's

outdated law on nature conservation. The law was drafted in the 1960s and barely mentioned local communities and/or their role and rights. Modifications submitted to a panel of experts, including Congolese lawyers, included the recognition of local communities and the roles and rights of marginalized groups, the extent of local community participation in protected area management, the recognition of the different governance and protected area types, the sharing of benefits generated by conservation, and compensations for the cost of conservation. These modifications to the law on nature conservation will shortly be submitted to the DRC Parliament for validation.

FFI continues to work closely with the ICCN, field partners and local communities to implement the community conservation strategy in several protected areas of DRC including Garamba, Kahuzi-Biega, Kundelungu and Maiko National Parks, and Tayna Gorilla Reserve, as well as the newly gazetted Sankuru Natural Reserve. Local communities will not only benefit from 40% revenue sharing from protected areas but also from the development of community conservation activities aimed at alleviating poverty. This in time will make them value these protected areas and decrease the pressure they exert on them for the benefit of future generations and DRC's rich biodiversity, including the Critically Endangered mountain gorilla.

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Reproduction in a second population of reintroduced western gorillas

On the 5 October 2007 a new-born gorilla was observed in the Batéké Plateau National Park, Gabon, during regular post-release monitoring of a group of reintroduced western gorillas. The mother is a 10 year old orphan of the bushmeat trade, named Lekedi after a river in the region of south-east Gabon from which she was taken by hunters in 1998. The father is probably the dominant male of the group, an 11.5 year old blackback. The other five males and seven females in the group are aged 7.5-11 years. At the time of conception the annual range of the group, the first to be reintroduced to the area, included 5.7 km² of forest. Although there was significant overlap with the 1.4 km² range of the second released group, which contains four males aged 5.5-9.5 years, at the time of the birth there was only limited contact between them.

The two groups were released during 2001-2004 as part of an ambitious programme to re-establish the Critically Endangered western gorilla in the Batéké

Plateau region of Gabon and Congo, run by the UK-based charity The Aspinall Foundation in collaboration with the two national governments. Overall, 53 western gorillas have been released, including 43 wild-born orphans of the bushmeat trade and one *in situ* and nine *ex situ* captive-born individuals abandoned by their mothers. Three wild-born orphans are currently being rehabilitated in Congo for future reinforcement of the reintroduced population, as will any future orphans confiscated by the law enforcement authorities.

The birth in Gabon is the sixth within the reintroduction programme. The first five were observed in the reintroduced population in the south-west Lefini Reserve in Congo, where one gorilla was born in April 2004, plus another four in the space of just two months from September to November 2006 (see *Oryx* 38, 251-252, & 41, 14). The first of these is now 3.5 years old and is gradually becoming more independent of his now 20 year old mother. Of the four babies in 2006, one disappeared 6 weeks after birth. The mother, at only 8.5 years old, was the youngest of all the six females to give birth, and while the reason for the disappearance of the baby will never be known, aggression by the second oldest male in the group may have contributed. The three other females were aged 9-12 years at the time of the births, and their babies remain in good health one year on. Preliminary data show infant mortality in wild western gorillas to be 8-43% in the first year (Robbins *et al.*, 2004, *American Journal of Primatology*, 64, 145-159), and therefore an 80% infant survival rate up to 1 year in Congo is another encouraging sign of the successful adaptation of the released gorillas to the reintroduction site.

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Mongolian Saiga Conservation Workshop

A workshop on the conservation of the Endangered saiga *Saiga tatarica mongolica* was held in Gobi-Altai Aimag, Mongolia, on 2-5 September 2007. The workshop provided scientists, law enforcement officials, local and provincial government leaders, representatives from local communities, and local and international NGO members an opportunity to review conservation plans and determine future goals. The event was organized by the Wildlife Conservation Society and funded by the Trust for Mutual Understanding, with additional support from the Mongolian Academy of Sciences, Mongolian Ministry of Nature and Environment, WWF-Mongolia,

and the Steppe Forward Programme. The major goals were to (1) exchange information about current knowledge and ongoing research on saiga, (2) coordinate local, national, and international programmes, (3) review previous Mongolian saiga conservation action plans, (4) determine the extent to which goals of the action plans are being met, and (5) identify knowledge gaps needed to bolster conservation efforts.

The population of the saiga antelope has plummeted by c. 97% over the last 3 decades, including the Mongolian subspecies that has been long isolated from the more numerous populations in Kazakhstan and Russia by the Altai Mountains. Thus an underlying theme of the workshop was to identify strategies to increase saiga numbers in the wild to eliminate the immediate threat of extinction. Through workshop presentations and group discussions a number of population and conservation goals were established. Workshop participants suggested a target of 20,000 Mongolian saiga in the wild by 2020. This will necessitate range expansion, with a goal of doubling their current range into areas where saiga were historically distributed (north and south-east of current range) but does not include areas where saiga were historically absent, such as the Transgobi.

Key impediments to achieving population and range expansion goals were identified as: poaching, especially for international markets; natural disasters, with specific concerns regarded dzuds (i.e. severe winter weather) and drought; pasture degradation, especially related to sheep and goat grazing; predation, with specific concerns regarding the impacts of wolves, golden eagles, and domestic dogs; human disturbance, with specific concerns related to roads, chasing with vehicles, and new regional development initiatives.

Participants determined that the major impediment to prevent poaching is the lack of financial resources for local government anti-poaching activities and control of illegal wildlife trade. Currently, there is a disconnect between policy and enforcement for anti-poaching efforts. Participants also recognized that more data on saiga behavior and ecology are necessary to facilitate conservation measures that may alleviate problems of natural disaster, pasture degradation, predation and human disturbance. Participants also called for immediate action to reduce disturbance during winter dzuds but also identified the need for additional information on the effects of weather on saiga. Finally, participants determined that a standardized survey method must be implemented and conducted regularly to assess population numbers and trends. A series of follow-up meetings are being arranged to evaluate survey methods, further refine action plans, and identify roles and responsibilities for local, national, and international

stakeholders to implement recommendations from the workshop to ensure the long-term conservation of the Mongolian saiga.

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Rescuing the Sichou oak *Quercus sichouensis* in China

Sichou oak *Quercus sichouensis*, belonging to the subgenus *Cyclobalanopsis* and endemic to China, is a tall, evergreen tree and produces a huge acorn that is unique in its subgenus. It was first described as a new species in 1951 based on specimens collected from Malipo, south-east Yunnan, China, in 1947. It was later also found in Funing, south-east Yunnan, in 1964. A third locality of Sichou oak *Quercus sichouensis* was reported in Tseheng, Guizhou, China, in 2007 (Chen, W. *et al.*, 2007, *Acta Botanica Yunnanica*, 29, 395-396). However, this new record doesn't reveal a bright future for this species as it is of only one individual. In the three known localities for this species only a total of five individuals survive in the wild: four in Funing in the subtropical evergreen forests and one on a farm in Tseheng. There are no remaining individuals in the type locality, even though the species was common in south-east Yunnan in 1947.

Although there are only five known individuals alive in the wild and it is facing an extremely high risk of extinction in the wild, Sichou oak is categorized as Endangered rather than Critically Endangered on the 2004 China Species Red List and has never been listed in the global IUCN Red List. The rareness of Sichou oak results mainly from degradation of its habitat and from deforestation for timber and agriculture. Its occupancy area is continuing decline. However, plans for conservation of the species are now starting through the efforts of Kunming Institute of Botany, Chinese Academy of Sciences, funded by the National Natural Science Foundation of China (no. 30700056).

This conservation programme covers more detailed field investigation, research on the physiology and ecology of seeds and seedlings, and reinforcement of existing populations. The field investigation will survey for any further remaining populations and for suitable reintroduction sites across southern China, and especially in south-east Yunnan and west Guizhou. Seeds of Sichou oak are unable to survive desiccation below a comparatively high moisture content and therefore its seeds cannot be stored in seed banks. Physiological and ecological studies will examine desiccation tolerance of seeds, germination conditions, and the best conditions for seedling growth. Reinforcement and

population reestablishment in the wild are the goals of the programme. Future work will include *in situ* conservation, introduction of the species into arboretums, and strengthening public awareness of the need to conserve both this species and its habitat.

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A previously unsurveyed forest in the Rubeho Mountains of Tanzania reveals new species and range records

Biological surveys in the Eastern Arc Mountains of Kenya and Tanzania continue to reveal new species and to extend the known ranges of plant and animal species, thus further highlighting the outstanding biological importance of this region. Here we report new data from a forest not previously surveyed. These data were collected during vertebrate surveys in the least-known forest blocks of the Eastern Arc Mountains, through a collaborative project by the Tanzania Forest Conservation Group and Italy's Museo Tridentino di Scienze Naturali, supported by the Critical Ecosystem Partnership Fund. Among other areas, surveys targeted the Rubeho Mountains in central Tanzania. Although recent surveys have been conducted in three Rubeho Forest Reserves (Mafwomero, Mang'alisa and Ukwiva), a previously unsurveyed forest outside any protected area was identified from satellite images and was surveyed in 2006. The forest is locally called Ilole and is centred on 7°26.095 S, 36°43.564 E. The montane, moist forest habitat covers approximately 25 km² from 1,700 to 2,000 m and consists of old-growth canopy dominated by *Ocotea usambarensis* interspersed with areas that have been logged in the past and now have regenerating and secondary forest. Ilole is the southernmost forest of the Rubeho Mountains and its southern slopes drop down to the Ruaha River gorge that divides the Udzungwa Mountains from the Rubeho Mountains.

Surveys were conducted during September 2006 and February 2007 by a team of six researchers and several assistants, totalling approximately 100 person days of survey work. Methods included camera-trapping, diurnal and nocturnal transects to record tracks, dung and opportunistic sightings, opportunistic searches for amphibians and reptiles, trapping for small mammals and amphibians, mist-netting for birds, sound recording for bio-acoustic identification of mammals, birds and frogs, transects to assess human disturbance, and interviews with people from adjacent villages to collect information about the fauna and forest disturbance. One hundred

and seven species of vertebrates were found (25 mammals, 62 birds, 10 reptiles and 10 amphibians). Of these, three amphibians are new species and one *Myosorex* shrew awaits identification. At least 10 species are endemic to the Eastern Arc Mountains and at least 18 species are near endemic, i.e. found in the Eastern Arc, adjacent mountains (Mount Kilimanjaro and Southern Highlands) and coastal forests. Six species are categorized as Endangered or Vulnerable on the IUCN Red List. Ilole appears unique in also having at least 12 new records (including the new species) for the Rubeho Mountains.

Among the mammals, a new population of Abbott's duiker *Cephalophus spadix* was found. This Tanzanian endemic was known from only five sites in the Eastern Arc and adjacent mountains. It is drastically declining throughout its range and thus the discovery of this new population is of great conservation interest. On the basis of forest size and camera-trapping rates we estimate there is a maximum of 50 individuals in Ilole. Camera-trapping also detected Lowe's servaline genet *Genetta servalina lowei*, a distinct taxon of genet known from the Udzungwa, Uluguru and Nguru Mountains (*Oryx*, 40, 139). This new record in the Rubeho Mountains extends the known range of this forest-dependent carnivore. Nocturnal surveys detected the mountain galago *Galagoides orinus*, an Eastern Arc endemic primate. Small mammal surveys detected the shrew *Sylvoisorex howelli* (W. Stanley pers. comm.). This is the south-western most population of this Eastern Arc endemic. We also detected seasonal presence of elephants, with indications that Ilole may be an important part of a corridor connecting populations from the Udzungwa and Mikumi/Ruaha ecosystems.

Ilole forest has a typical eastern Arc avifauna assemblage containing one endemic and eight near-endemic Eastern Arc species. This is comparable with the avifaunal endemism levels of the South Pare Mountains (nine species) but much less than the adjacent and larger Udzungwa Mountains (30 species). We did not record the Rubeho partridge *Xenoperdix obscurata* that is reported only from Mafwomero forest in the Rubeho Mountains.

The herpetological survey revealed eight new records for the Rubeho Mountains other than the three new species that await description. The new species have been assigned to the genera *Callulina*, *Provebriceps* and *Nectophrynoides* (M. Menegon, unpubl. data; S. Loader, pers. comm.), and are probably endemic to Ilole forest or the Rubeho Mountains only. Ilole forest has a typical Eastern Arc herpetological fauna, with several Eastern Arc endemic species, e.g. *Leptopelis barbouri* and *Africalus uluguruensis* among the amphibians, and *Chamaeleo werneri* and *Buhome procterae* among the reptiles.

Despite Ilole's outstanding biological importance our disturbance assessment indicates that the forest and its biodiversity are threatened by logging, hunting and growing human pressure, with settlements and farms moving closer to the forest edge. We found signs that the timber tree *Ocotea usambarensis* has been selectively logged in the past, and the old-growth forest has degraded to secondary and regenerating vegetation in many areas, especially towards the lower elevations and northern slopes. Thus, we strongly recommend that appropriate conservation measures be taken to ensure the protection of this forest.

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An unprecedented opportunity for biodiversity conservation? Hopes and fears surrounding international payments for ecosystem services

The 9th BioECON (Biodiversity and Economics for Conservation) meeting was held in Cambridge, UK, in September 2007 with the theme of Economics and Institutions for Biodiversity Conservation. BioECON is an interdisciplinary network bringing together researchers and policy makers interested in conservation. With the next meeting of the United Nations Framework Convention on Climate Change (UNFCCC) approaching in December 2007 (Bali, COP 13) the opportunities and challenges of international payments for ecosystem services (IPES) schemes for funding biodiversity conservation were top of the agenda.

The principle that beneficiaries of environmental goods and services should pay directly for the benefits they enjoy is gaining increasing attention. Payments for carbon sequestration under UNFCCC represent the most developed IPES mechanism to date. Deforestation and land-use changes contribute about 25% of global greenhouse gas emissions, and many countries will be lobbying for approval in Bali for reduced emissions from deforestation and degradation (REDD) as a mechanism for reducing global CO₂ emissions under UNFCCC. However, owing to competition from alternative sequestration options, the carbon market alone is unlikely to provide sufficient funds to ensure effective forest conservation, yet by simultaneously tapping into climate and biodiversity funding sources, REDD

provides an extraordinary opportunity to generate funds to support the long-term protection of large areas of intact forest habitat. Despite offering great hope, delegates at the BioECON meeting raised serious questions about the implementation of international payments for environmental services such as REDD: the most critical being 'who will be paid?'.

Many potential providers under REDD schemes (i.e. poor, forest-dwelling people) have weak or no property rights, and enjoy poor representation at national and international levels. There is a clear risk that corruption, mismanagement, or simply the high costs of working with widely dispersed people in areas with poor communication will mean that many of the most deserving and vulnerable providers will see little of the payments. While REDD and other IPES schemes may provide a mechanism to fund global conservation, they don't offer a solution for how conservation should be done. It is possible that valuable insights for implementing REDD and other IPES schemes can be gained from the forest certification community, which has had to tackle many of the problems of integrating traditional rural livelihoods with market-based incentives.

If the international community supports REDD in Bali it is likely to represent only a brief window of opportunity for biodiversity conservation in developing countries. As background rates of deforestation and forest degradation remain high the potential for REDD to make a significant contribution to climate amelioration will decline. Conservation scientists and practitioners therefore need to engage quickly with policy makers and financial institutions to help develop a framework for effective implementation of REDD and other IPES schemes. BioECON, with its mix of economists, ecologists and social scientists, provides a good example of the sort of interdisciplinary approach that is urgently needed to make the most of opportunities arising from IPES to deliver effective conservation without disadvantaging local people. There is a lot of work yet to be done.

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Recolonization of abandoned breeding grounds by storm petrels in Sicily

Storm petrels *Hydrobates pelagicus* are widely distributed in Europe along the Atlantic coast and the Mediterranean. The largest colonies are those located in Atlantic sites, such as the Faroe Islands with 150,000–400,000

pairs, UK with 20,000 – 150,000 pairs, and Iceland, with approximately 150,000 pairs. In the Mediterranean basin the largest colonies are 5,000-8,000 pairs on Malta and 2,500 pairs in Italy. On the IUCN Red List the storm petrel is not considered to be under any threat and is thus categorized as Least Concern. The species was previously categorised as Near Threatened but after several studies on the Atlantic population its status was down-listed. However, it has been proposed that there are two subspecies of *H. pelagicus*: the smaller *H. p. pelagicus* in the Atlantic and the larger *H. p. melitensis* in the Mediterranean. This differentiation was recently demonstrated by analysis of mitochondrial DNA from five populations across the Atlantic and the Mediterranean. If we focus only on the Mediterranean subspecies, a large decrease has been observed, mainly due to habitat degradation and introduction of predators, such as rats and cats, and it thus requires some conservation action.

The second largest population of storm petrels in the Mediterranean is on the Sicilian island of Marettimo, Italy, with several colonies along the north-west coast. During summer 2003 one of us (C. Soldatini) observed a nesting attempt in Camel Cave on Marettimo, reported to have been abandoned by storm petrels in the 1970s. However, in subsequent visits in 2004-2006 (B. Massa, pers. comm.) no breeding individuals were found. During the 2007 breeding season, while working at the

main storm petrel colony on Marettimo, we made several visits during the day to Camel Cave and noticed the peculiar odour of storm petrels but no visible activity. We then made a night visit on the 22 of July and confirmed the presence of breeding individuals, with a minimum of 20 individuals flying around in the cave, and estimated the presence of at least 30 pairs on the basis of vocalizations heard from crevices. Some egg shells were also found.

The discovery that an old colony, reportedly abandoned, has been re-colonized may mean that the population in the only remaining colony has increased and that individuals are seeking new places to breed. It is important to extend these nocturnal visits to other islands in Sicily to determine if populations are also recovering elsewhere.

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