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Photo: © Karin Temperley



THE EAST AFRICAN
WILD LIFE SOCIETY

The impala is the symbol of the East African Wild Life Society. 'SWARA' is the Swahili word for antelope.

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Welcome

When SWARA was re-launched four years ago, the guiding idea was that it should become even more of a treasure trove of conservation ideas and examples than it had been in a long a distinguished history. The EAWLS Council wanted it to become the Voice of Conservation in East Africa, a tag line that now goes on the cover page. I hope we live up to that. The EAWLS and SWARA's Editorial Board do not endorse, back, support or agree with every article that appears between these glossy covers. Where it has a view, these are expressed as such, usually in the Chairman's or Executive Director's Letter or in separate policy statements.

What is important, to us, is that the Conservation Community has an outlet in which to express its many and varied views to each other, and to the public,

without whom their causes and work are weakened by the perennial problem of public support and money. Looking at the current issue I am happy that we can run two separate and, in their own ways, equally provocative Opinion pieces. I hope they generate lots of correspondence for our rapidly-growing Letters page. That is the forum for some of the most important Voices of Conservation in East Africa and beyond: Yours. Advocacy without public support is a car without wheels. Looking at Nigel Hunter's farewell letter on the Executive Director's page, it is good to chart some of the success stories EAWLS has had, with its partners, in the field of sound governance. Thank you for your support. Conservation needs you.●

Andy Hill, Editor

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Message from Outgoing Executive Director

I am writing to all of you to let you know that we have now restored our online payment facility.

- **To Renew or Join as a new member, use this link - <http://www.eawildlife.org/join/onlinepayment/joinorrennewmembership>**
- **For gift membership, use this link - <http://www.eawildlife.org/join/onlinepayment/givegiftmembership>**

Up to several months ago, we did have this facility using Africa Travel and Tourism Association (ATTA) based in the UK. Unfortunately, the UK changed its laws to disallow any UK organization to process 3rd party debit cards as part of tightening up on money laundering. We therefore had to start from scratch again. Luckily we have been able to partner with a Nairobi based bank – I & M Bank - and so we are again operational for facilitating members to pay online. We have also tried to make the website (www.eawildlife.org) more user friendly.

Whilst in the transition phase, we have kept alive the 2checkout.com option. But this has not been without problems, with some of you paying 2 or 3 times over. We apologise for the inconvenience this has caused

to those who have suffered this experience. We recommend that members no longer use 2 checkout.com and once we are certain that no new transactions are occurring, we will close the 2checkout.com option down.

For Kenya members there is the Mpesa option, and guidance on using this method is on the website (<http://www.eawildlife.org/join/paybypesa>), or we can provide such guidance by email on request.

Let me also use the opportunity to apologise for the delay in producing the May/June newsletter. We have made a few changes in staff responsibilities – hence the delay. But we should be sending you all one in July.

Lastly you need to know that I am finishing my time as Executive Director at the end of this month. Michael Gachanja will be taking over. However I will be staying with the Society, with a responsibility to help fund raising.

Best wishes
Nigel Hunter,
Outgoing Executive Director,



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Options to stem human – wildlife conflicts

Recently, there have been deplorable reports in the local and international press of human – wildlife conflicts around wildlife protected areas in Kenya. For example, a few days ago it was reported that enraged pastoralists killed six lions in the Kitengela area surrounding Nairobi National Park. This sad incident was a serious threat to the lion population in this national park, which stood as at a mere 36 in total. It was followed by an apparent revenge attack by lions in the same area the following day and, as the situation stands, one cannot rule out counter-revenge attacks in the same area. The Kitengela case is neither unique nor isolated. In the same week, similar conflicts were reported in Nguruman escarpment, in Taveta, Mt. Kenya and other places. Such reports are becoming so frequent and widespread that they call for an immediate national response.

In the wake of the escalating conflicts, let us start by addressing some broader underlying issues as we formulate an appropriate national response to this increasing threat to national wildlife heritage and tourism industry. Firstly, we should address the

reality that, under the existing wildlife policy and law and under the current management responsibilities for wildlife protection areas, surrounding human populations do not consider themselves as stakeholders in the wildlife being managed in the protection areas. Rather, they perceive wildlife as assets which belong to somebody else (the government) and which often threatens their lives and livelihoods. As things stand, they derive little benefit from conservation of wildlife, being national assets, which the law forbids them from interfering with. As long as national wildlife policy and law maintain that all wildlife is the exclusive asset of the state and do not adequately address benefits to human communities surrounding wildlife areas, it is likely that the present trend of human–wildlife conflict will accelerate in future. This reality will hold despite increased public education and the profiling of the economic contribution of the tourism industry by conservation groups and government agencies such as the Kenya Wildlife Service (KWS).

The Maasai pastoralists who killed the lions in Kitengela area were emphatic that they were forced into this

act to protect their lives and livelihoods. They added that, as a community, they respect wildlife and have co-existed well with wildlife in other circumstances. But they cannot sacrifice their livelihoods for the conservation of national assets without being offered alternative livelihoods. While KWS has a strong community outreach programme which aims at sharing benefits from wildlife conservation with communities around wildlife protection areas, it is clear that, in this particular case, the community is of the perception that any direct benefit shared is not commensurate with the value of their livestock. On the other hand the Kenya Wildlife Service (KWS) maintains that they committed a criminal act under the Wildlife Act.

Unfortunately in Kenya when such conflicts are addressed through policy and legislation reforms, they are viewed only from the narrow perspective of levels of compensation for human injury and damage to crops and livestock. For some reasons, there is strong resistance to extending the wildlife policy analysis into broader perspectives such as wildlife co-management with communities and more balanced benefit sharing, as has been achieved



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in other countries in Africa. Kenya's wildlife policy analysis and legislation is heavily influenced by "animal lover" organizations and individuals who are of the strong view that the local populations are no good for wildlife conservation.

Secondly, we should re-evaluate the appropriateness of the usual path to achieve solutions to such conflicts - fencing of wildlife protection areas. Reading the recent publication titled "Environmental, social and economic assessment of the fencing of the Aberdare Conservation Area" brings out the very positive impacts of fencing this major wildlife conservation both to wildlife populations and surrounding human populations. Indeed, it is encouraging that the same actors have immediate plans to extend fencing into Mt. Kenya and Eburu conservation areas. However, there are scientific questions to be addressed in adopting a fortress approach to wildlife conservation. What will be the impact of disrupting inter conservation area corridors? For example, some wildlife

ecologists have argued against the fencing of the Nairobi National Park on the grounds that this would block wildlife dispersal areas.

Thirdly, we should re-assess the effectiveness and appropriateness of the main public agency responsible for wildlife conservation – KWS. Learning from the heated public debates around the increasing human-wildlife conflicts in various parts of Kenya, it is clear that KWS lacks the capacity to pre-empt and control wildlife damage in areas surrounding the protected areas. The prevailing complaint against KWS is that it is more proactive in rescuing wildlife that has strayed outside protection areas than in responding to damages to life and livelihoods caused by such straying wildlife. Although KWS cites a lack of resources in its defense, this could also be a reflection of an unfortunate institutional bias – too narrow focus on the wildlife they protect in disregard for the human population for whom that they protect the wildlife.

The future outlook is of even of greater concern. Kenya's Vision 2030

paints a bright path of development of the tourism industry which depends largely on diverse wildlife population. However, some of the present wildlife conservation areas may have lost their wildlife altogether. We have to be forward thinking in our formulation of land use policies, wildlife policies, and livelihood enhancement (wealth creation) policies to avoid a bleak conservation platform in 2030 and beyond. And this must start now.

May I take this opportunity to inform members that Michael Gachanja will replace Nigel Hunter as our Executive Director from 1st July this year? Michael has spent one year working closely with Nigel and I expect a smooth carry-over of responsibilities. Nigel Hunter will continue to serve the Society in a new position created for fund raising. I convey encouragement and best wishes to both Michael and Nigel in their new responsibilities. ●

Fredrick Owino
Chairman



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Kudu

Stepping down after three years – some reflections



After three years with the Society as Executive Director, I am standing down at the end of JUNE. This change has no suddenness or drama. It has been planned that I should hand over, after my three years, to Michael Gachanja, who has been Deputy Director during the same period of time.

If you had asked me four years ago, if I had anticipated becoming the Executive Director of the Society, my honest response would have been one of surprise, as my background is that of a government officer and international civil servant. I would also have been concerned that a transition from a government to non government organization would have its problems. Was I right to be concerned?

My previous experience in being head of department, implementing institutional reform, managing budgets and working with donors convinced me that the attributes required for those activities are no different. The main difference came in switching from being part of a government decision-making process to an advocacy approach trying to persuade government decisions to be made in the best interests of

Kenya rather than in the interests of some individuals. This challenge is particularly pronounced in Kenya, given its history in corruption and impunity. I now know what it must be like to be a consultant. You make recommendations, but you don't know if your recommendations will be adopted.

Despite that, I have found the advocacy work stimulating, if sometimes frustrating. I would like to think that the last three years have seen the Society grow in advocacy vigour.

Here are some of our successes:

- Retaining National Park Status for Amboseli
- Stopping a tarmac corridor being developed through Aberdare National Park.
- Preventing Dakatcha woodlands being clear felled for 50,000 ha of Jatropha
- Preventing Karen Club felling part of Ooloolua Forest for a water reticulation scheme
- Preventing a dam being constructed in South Nandi Forest
- Contributing improvements to the Wildlife Bill
- Opposing the development of the highway through Serengeti
- Effecting improvements to three Land Acts
- Supporting development of a management plan for guiding ring net fishing in a legal and sustainable manner
- Supporting a comprehensive land use plan being undertaken in the Tana Delta

It would be misleading to suggest we did all this on our own. In several of the above examples, we were closely partnered by Nature Kenya. We also need to remain vigilant even on these

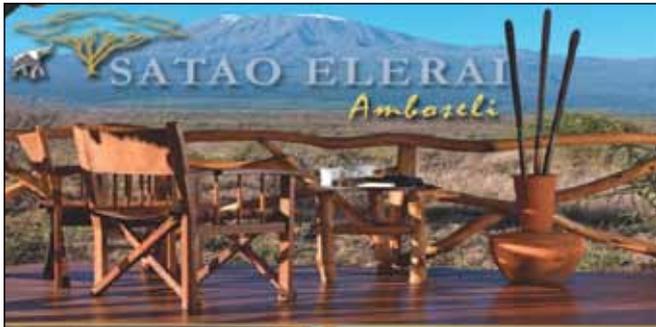
successes, as you never know when a proposal such as a dam will resurface. In regard to advocacy, an interesting development is the role the previous edition of Swara has made. The article on Kibwezi Forest and Umani Springs certainly raised the profile of this threat in some government quarters. The Society is now following up this problem, and making the case to prevent any permanent damage to the spring, the forest and the welfare of the local community.

I have also greatly enjoyed being able to support the production of Swara. I do think Swara fills a valuable niche of putting conservation issues, good and bad experiences, discoveries, etc. into the public domain. The Society is currently well served by the Swara production team, supported by the Swara Editorial Board.

It would be remiss of me if I did not thank our Chairman, Professor Frederick Owino, and the Council for the support and encouragement they have given me over the three years. I have also been well supported by the Secretariat staff, who remain a dedicated and committed team in serving the best interests of the Society. I have also had the opportunity to meet and work with many people, whom I might not have otherwise met, and I am the richer for that.

Whilst I am stepping down as Executive Director, I am not leaving the Society. I start a new role in July as the Society's Fund Raiser, without any role in the day-to-day affairs of the Society. That mantle falls on the shoulders of Michael Gachanja, and I wish him every success as the new Executive Director. ●

Nigel Hunter
Executive Director



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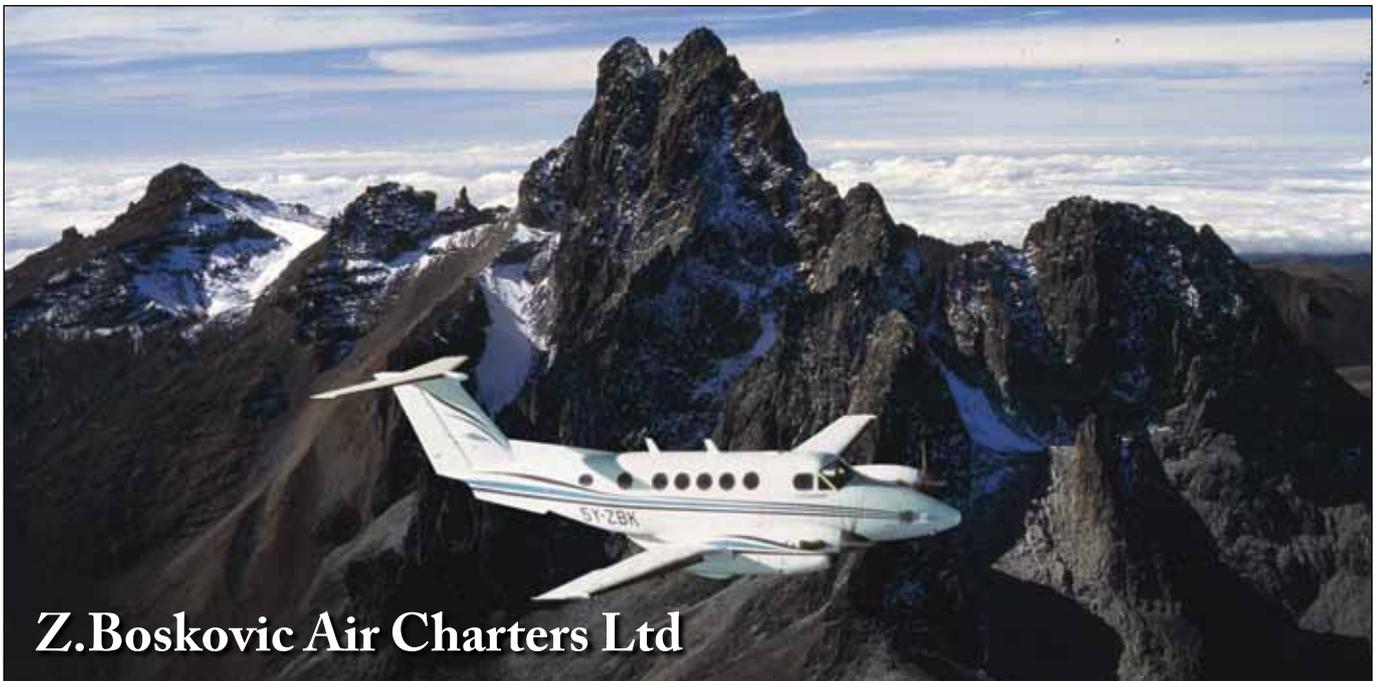
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Conservationists should carry condoms – not GPSs

BY KARL AMMANN

Not a day seems to go by without two or three news items showing up, including headline stories in some national papers, that document how the killing of rhinos for their horns has become a serious conservation crisis. The level of awareness, mostly created via the traditional media but also the social networking sites, is such that policy makers now take the issue seriously.

But what about some of the other charismatic flagship species—such as our closest relatives, the African great apes (chimps, bonobos, and gorillas). When I Google “Chimp Poaching News” the top item seems to be from a web page that is no longer active. The next item goes back to 2011 and then comes an item from 2008, and next 2007.

This complete lack of news about ape conservation is deeply disturbing. Someone is asleep at the wheel. Maybe a lot of people. The reality is that while the Rhino population, despite the poaching, is still on the increase in South Africa and even in East Africa, the African great ape populations are declining daily, and at a faster rate than ever before. (The only exception in this trend seems to be the mountain gorillas, where a lot of money is being made by tourism. The image of countries like Rwanda and Uganda is directly linked to the conservation status of mountain gorillas, and the conservation community wants to be part of this success story.)

Early last year, I became aware of a very active and completely illegal trade in live baby chimps being traded from Guinea, in West Africa, to China (and also, to a lesser extent, to private collectors in the Middle East). The latest

information tells me that some 130 chimps and 10 gorillas were smuggled out of Guinea during the last three years. To some extent under the nose of ape conservation establishment players with projects in the country. That’s a horrific number, considering how many adults were most likely killed to generate the orphans for trade. The CITES export permits listed them as “C,” meaning captive-born. In truth, not a single one was captive born. Most would have been smuggled over several international borders in the region before being shipped out under falsified permits to China and some of the private collections in the Middle East.

When the CITES Secretariat finally investigated this out-of-control-trade, their public statement did mention Guinea was not in compliance with the Convention on International Trade in Endangered Species, but it did not dare to mention China as an equal player when it comes in infringing the treaty. In their confidential report, the Secretariat outlined some of the corrupt practices in Guinea that could not have gone unnoticed by the importing country. Double standards on that level as well.

Meanwhile, the most effective enforcement tool, besides suspending the offending countries (not an option CITES ordinarily considers), would be to repatriate those ape orphans to Africa and thus keep the importer from being able to use them commercially. This has not happened. As usual, representatives of the CITES Secretariat hide behind the supposed lack of capacity in African sanctuaries.

However, a Kenya based chimpanzee sanctuary associated with PASA recently added new housing and enclosures and

offered the CITES secretariat the space to push for real enforcement at the China end. Their offer has not even been acknowledged.

This continuing trade in highly endangered apes out of Africa—to rich people in China and the Middle East—is a major scandal. So why would nearly every reader of this magazine know about the rhinos poached in South Africa in the last year, while very few—possibly none—would be familiar with the Guinea case?

Is it because the chimps live mostly in Central and West Africa, which many players dismiss as a lost cause for conservation anyway? Is it because rhinos live on ranches owned by influential individuals who can get the story to the media? Is it because rhinos (at least White rhinos) are easy to photograph on any safari? Is it because they live in countries that have a wildlife tourism industry, which helps create some of the political will absent in places like Guinea, with no tourists to speak of? Is it because we are only start getting alarmed when the number of a species are down to levels where every individual can be accounted for - or not, as seems the now be the case.

Whatever the reasons, the ape conservation community could learn a lot from the rhino community, in terms of lobbying campaigning and activism. While I have no problem getting my own rhino horn stories placed in various publications, the Guinea Ape trafficking story has not made it even to primate blog sites.

These double standards in reporting are more than matched by a double standard in the efforts to protect. Some people are now talking about deploying drones over sensitive rhino habitat.

Helicopters are already being used, while the South African army has been deployed in Kruger national park. I have seen figures of up to USD1200 as the estimated monthly cost to protect one rhino on private land. Meanwhile, there are still areas in northern Congo where, according to my own estimates, there are still many thousands of chimps being hunted with increasing relentlessness. We know what the density of chimps is in this area. We know the size of the representative ecosystem. We know human density and the hunting pressure associated with it. We know they are being actively hunted as a food item.

This would be an obvious area to put down some conservation money; and yet to the best of my knowledge, not a cent is being spent on active conservation in this whole range. However in a latest twist, a conservation NGO not familiar with the region has retained more scientists to do yet another survey. Why? From my

perspective, the reason seems to be that lots of would-be conservationists really consider themselves field scientists who are looking to spend as much a time as possible in the bush and have their life style financed by donor money. Plus of course surveying is the easy part and with more surveys on top of surveys there will never be a need to address the real issues, which are a lot harder to get to grips with.

It is far easier to get a detailed scientific research proposal from academics than it is to find scientists who are willing to deal with the main conservation problem – humans and the increasing numbers of them. We need conservationists who are willing to sit down with village chiefs, corrupt government officials and ill-disciplined army units, to put an emphasis on the enforcement of national laws. We need conservationists travelling with backpacks full of condoms instead of GPSs, willing to set up family planning units in even remote areas. That can

be hard work and frustrating and it is not something candidates line up to do “research” in. Studying the behaviour of the last members of a species is a lot sexier.

The fact is that when it comes to wildlife conservation, the animals are not the problem. The humans are. Dealing with the problem would logically mean dealing with humans. Yes, dealing with humans can be hard work and a real uphill struggle . . . and most wildlife conservation “experts” did not go into this business to deal with the frustration that comes with human interaction. In my opinion, what we need is a new type of conservationist: one who is interested in humans and human nature. Maybe that means psychologists or even psychiatrists—or, as I have argued in the past, real ‘Eco-missionaries’ willing to live with the people and work with them on a daily basis - even on a Sunday. ●

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Conversations on Conservation

– an article provoked by Mordecai Ogada

Dr Mordecai Ogada's article in Swara 2012-03 led to a conversation between an accountant 'conservationist' friend and myself. We delved into Mordecai's theme of conservationists from other professions (bankers, doctors, lawyers etc) heading a conservation organisation like KWS (Kenya Wildlife Service). The accountant passionately affirmed that any professional can lead KWS as long as s/he has management skills and the backing of technocrats conversant with wildlife management. But that passion suddenly disappeared when I asked him whether I, a wildlife ecologist, can head PwC (Price waterhouse Coopers), a finance/accounting firm. The argument that 'anyone with management skills' can lead an organisation had lost its oomph.

So why is it weird to think of a wildlife ecologist heading an accounting institution but it is acceptable that an accountant, or any other non-wildlife professional, can head a wildlife institution? I offer two reasons why I think we have this state of affairs in the wildlife sector.

First, it is partly to do with the fact that 'wildlife conservation' as an academic and professional discipline is a relatively new phenomenon in Kenya compared to others such as medicine, banking and law. The latter have been offered at degree and post graduate level since Kenya's independence in our universities and produced many professionals running our academic and public institutions. And over time this workforce has organised and registered itself as professional entities – Kenya

Dentists & Medical Practitioners Association, Kenya Bankers Association and Law society of Kenya - that have clear codes of conduct and ethical standards and membership of them is clearly understood in terms of educational qualification.

In the case of wildlife management as an academic discipline at university level, it was only started in the mid-1980s at Moi University, Eldoret. And I dare say that there is considerable disconnect between what is taught at University and the reality on the ground and say it with a heavy heart as a former graduate of Moi. We were taught parasitism, limnology, geo-physical environment, biochemistry, wildlife dynamics using predator-prey dynamics of small rodents at far away Canada and many other interesting case studies of everything: but nothing about Kenya and contemporary Kenyan wildlife conservation challenges.

I am sure students of wildlife management of my time will agree with me that we find ourselves in a sector that is, if we use resource allocation as an indicative factor, primarily about security and anti-poaching, skills not taught at university, and the issues of wildlife ecology and interactions, that we were thoroughly trained in, are peripheral matters in the day to day running of wildlife managers job. Then beyond security, 90% of conservation challenges are of a human nature – conflicts with people, winning space in community areas, encroachment by people and livestock, conversion of habitats to crop farming, blocking of critical corridors as human population expands, negative attitudes

to wildlife, compensation, community benefits, politics (within/out Kenya) of consumptive versus non consumptive use of wildlife, CITES and the ivory trade. In my time at university, not much was devoted to these human dimensions of wildlife conservation although I am aware there have been attempts to bridge this gap at my alma mater.

This disconnect between reality and course content and the late entry of wildlife management as a professional graduate course is my first excuse for the immaturity of the wildlife profession in Kenya vis-à-vis the other established disciplines.

At this juncture one may point out that we have had wildlife management, and managers, in Kenya since the end of the 19th century when Game regulations were introduced during the colonial era. And arguably the greatest of them all during that time was David Sheldrick, Tsavo East's first warden (1948 to 1976) whose life and dedication inspired Timothy Corfield's classic handbook, *The Wilderness Guardian*, published in 1984. I say this is true but posit that 'traditional' wildlife conservation as practiced in yesteryears has its challenges – and this constitutes my second point about what ails the wildlife profession – the job description of a wildlife manager, in the historical sense, was/is too broad.

If we use Corfield's handbook as a reference, the wildlife warden must be an administrator as he is in charge of a large workforce, be conversant with considerable engineering knowledge as s/he responsible for development and maintenance of roads, buildings,

boreholes, firebreaks, airfields etc. The person must also have a grasp of ecology and natural history, be able to work out costs and prepare financial estimates, fly an aircraft, and be conversant with the use of firearms and be ‘disciplined/uniformed’ as he is in charge of an armed ranger force. In addition he needs basic knowledge of law, of medicine as a doctor is/was not easily contacted in the remote areas that parks are, and of veterinary medicine as handling of animals is inevitable in wildlife management. In sum the wildlife manager is expected to be a jack of several trades and a relatively good master of them all.

I think by now you get the picture that the wildlife sector is in one heck of a dilemma even in defining such basics as what is wildlife management in the 21st century. In such a state I agree that a professional from outside the sector with leadership and management skills would do just as well as any ‘wildlife manager’.

Thus to my accountant friend, rest assured I will not apply for the job of CEO at PwC. The accounting profession evolved long before the confusion at the wildlife industry. Like Mordecai, I end by saying, judge not my opinion— rather look at what thoughts my conversation provoked in you. And take part in the conversation.

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Tourists underwrite Morocco's illegal trade in wildlife artefacts



Crowds gather at a bird market held twice a week on the edge of Fes' Medina.

Exotic Morocco has everything a tourist could dream of – from desert wastes to snow-capped mountains and a rich cultural heritage and cuisine in between. But tourists, alas, whether wittingly or unwittingly, are not only supporting the holiday trade – they are backing an illegal trade in live species and wildlife products.

Morocco has a rich and varied natural landscape of mountains, deserts and coasts containing diverse wildlife. It has an impressive cultural heritage of the largest functioning medieval city in the Muslim world, magnificent old buildings, a unique cuisine and a present-day lifestyle based on traditional Islamic beliefs adapted by influences from the French Protectorate Period (1912-1956), such as the

widespread use of the French language. Morocco attracts a huge number of foreign visitors, 9.3 million in 2010, more than double the number in 2001, mostly from nearby France and Spain.

Foreign tourists, along with some of the 35 million Moroccans, support an almost totally illegal retail wildlife trade in live species and their products. This retail trade has hardly been studied in detail, although there have been surveys of the wholesale export of some species, such as the extensive international trade in wild-caught tortoises (*Testudo graeca graeca*). We, therefore, decided to examine what wildlife and their products are offered for sale in the retail shops and stalls in two of the most frequently visited cities in Morocco during three weeks in December 2011.



In the wild, tortoises daily walk amazingly long distances. Being packed together in small boxes in which they can barely move around causes stress and leads to premature death.

PHOTOS BY: ESMOND MARTIN

THE AUTHORS

ESMOND MARTIN



first came to Africa as a teenager and immediately decided to make his career as a Geographer, specialising in Africa. He has a PhD from the University of

Liverpool, has written books on a variety of subjects, including the dhow trade of the Indian Ocean, rhinos in crisis, and the elephant ivory trade in Europe, America and Asia. He is presently working on a report detailing effective strategies for rhino conservation.

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CHRYSSEE PERRY MARTIN



has a PhD in French literature from the University of Arizona. On her first visit to Africa in 1966, she studied French African poets and novelists. She and her husband,

Esmond Martin, live in Nairobi; together they have carried out research on wildlife trade in more than 30 countries; in between trips, she has worked in the Kenya Wildlife Service Animal Orphanage for 40 years.

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These are our findings:

FES

Fes, a city of a million people, was our first place of study. Approximately 300,000 people live in the Old City, or Medina, carrying out a traditional way of life that has remained almost the same for centuries. For example, the tanneries in Fes are some of the most striking sights to witness anywhere in the Muslim world. Dating back to the 10th century the scene has changed little in appearance: men can be seen standing in cauldrons of gushing water, treating skins of goats, sheep and cows with pigeon dung, cow urine and other substances. Some workers apply various dyes in vats. Surrounding the medieval scene are roofs covered by the very brightly dyed skins in the sun. The workers are an hereditary guild, passing their skills from one generation to the next.

The tanneries are not the only businesses carrying on in a traditional manner in Fes. There are literally

CONSERVATION



PHOTOS BY: ESMOND MARTIN



TOP & BELOW: Tanners in Fes slosh about in the debris of animal skins, a scene practically unchanged for centuries.

We saw no brand-new ivory items for sale. Those made after 1990 were one necklace and one tortoise figurine from Central or West Africa. The older items comprised nine knife rests, five jewellery items, four animal figurines, two carved tusks and two polished tusks (all made in West or Central Africa), a glove stretcher and a set of brushes (all made in Europe). Vendors told us most of these ivory items were at least 25 years old. Additionally, we found a mid-19th century sword with an ivory, silver and gold inlaid handle made by Berbers – the most expensive item with ivory in Fes at 100,000 dirhams or USD 12,048. Such shops offer discounts of 20% and occasionally up to 30%. The cheapest item was a 1-cm wide ring for USD 18.

For hundreds of years up to around 1920 ivory was crafted in Fes and other

thousands of small, specialised workshops where artisans make furniture, carpets, leather goods, metal objects, clothing, etc. The government supports them directly by not levying value added tax on goods sold in the Medina. Many workshops make a variety of goods primarily for the domestic market, but also items for tourists. They are located off narrow lanes where no cars or trucks can operate, so people transport goods on

the backs of donkeys, mules and horses. Interspersed among the workshops are thousands of small retail stalls selling locally-made curios.

In the Medina and the Ville Nouvelle, the so-called 'new city' begun by the French in the early 20th century, there are larger antique/souvenir shops. In five of these shops we saw 27 ivory items probably only two of which were made after 1990, the date of the international ivory trade ban of CITES.



TOP: The ferrets for sale at Fes' bird market are often removed from their cages so that people can see how tame they are.

BELOW: Some Berber-made 19th century swords seen in the antique shops of Fes and Marrakesh have rhino horn or ivory handles.



PHOTOS BY: ESMOND MARTIN

places in Morocco into a variety of objects, especially weapons, including rifles with ivory stocks and daggers or swords with ivory handles. The carvers also made jewellery, Koran boxes, containers for gunpowder, inlaid furniture and artificial human teeth: it is not entirely clear why Moroccan craftsmen stopped working ivory 100 years ago. This has certainly not been the case in other Arab countries in Africa, such as Egypt and Sudan, where carving is still taking place.

Moroccans gave one main explanation which was that the Berbers started using cheaper camel bone

instead. We saw thousands of camel bone items, many inlaid into wood and sometimes into metal objects. Most common were small squares of camel bone that entirely covered an item and were glued on together with metal wires said to allow the bone to expand and contract in the different seasons. The inlaid items included furniture, boxes, bowls, lamps, urns and weapons; and they were mostly 20 to 50 years old, vendors said. The larger items do not

sell quickly as they are heavy. Many are dyed with henna to make them an orange/brown colour, not resembling ivory. In contrast, in Egypt and Sudan, most camel bone items are bleached to simulate ivory and used to carve figurines, and jewellery.

A camel bone walking stick was priced at USD 783 in Fes while a solid ivory walking stick in Egypt was the same price, although ivory is a far superior and more expensive material.



The large pieces of furniture inlaid with camel bone in Fes were very highly priced. A cupboard made in the 1950s was USD 30,000.

The use of camel bone started declining around 1990, despite the huge increase in foreign tourists, and by 2008 had ended in Fes and elsewhere in Morocco except on special order. We spent eight days trying to track down a camel bone workshop in Fes but never found one. Again, the craftsmen's material of choice was replaced by a cheaper one, cow bone. Also, a less expensive metal, zinc, is now used instead of copper wire to hold the cow bone inlay pieces together. Many workshops on view in Fes use cow bone, but even this material is starting to be replaced by plastic that is even cheaper. The vendors claim that many customers do not care what materials are used, are often unable to recognise what they are anyway, and prefer the lower price and lighter weight of the plastic objects.

The most expensive raw material from a wild animal crafted in Morocco was rhino horn, for making weapon hilts. The use of rhino horn ended around 1910. In Fes we found for sale only four such items: two old daggers and two old swords with rhino horn hilts. Three were crafted in Morocco, and the other was a Yemeni curved traditional dagger. The Berber-made dagger dated from the late 18th century and was priced at USD 4,200, while a late 19th-century Berber-made sword with a rhino horn hilt was USD

THE USE OF CAMEL BONE STARTED DECLINING AROUND 1990, DESPITE THE HUGE INCREASE IN FOREIGN TOURISTS, AND BY 2008 HAD ENDED IN FES AND ELSEWHERE IN MOROCCO EXCEPT ON SPECIAL ORDER.

8,400, and a sword, perhaps from the 14th century, made in Fes for a Jewish family, inlaid with gold and silver, was priced at USD 18,750.

Fes also has a retail trade in small live animals and birds. Quite a variety is in the bird market, located at Bab Jamai just outside the Medina. There, next to the wall surrounding the Medina, around 50 vendors offer birds for sale

on Friday and Sunday mornings, mostly doves, pigeons and song birds. Several hundred potential customers and fanciers of these birds wander around, all Moroccans crowded together, to assess quality and prices. We saw no foreign tourists during our two visits. Birds ranged in price from USD 2.0 to around USD 150. Ferrets were priced from USD 48 for juveniles to USD



PHOTOS BY: ESMOND MARTIN

TOP LEFT: This horse, covered with rectangular slices of polished camel bone, is a good example of Moroccan artistry, and was for sale in an antique shop in Fes.

TOP RIGHT: There were seven Barbary macaques being paraded around Djemaa el Fna in Marrakesh to earn money from tourists taking their photos. These monkeys are not very friendly, and the handlers keep them held on leads.

BELOW RIGHT: Waiting for tourists, the snake charmers in Djemaa el Fna in Marrakesh were intermittently displaying 44 snakes and putting those that were not being shown into woven baskets.

180 for adults that have been trained; they are often used by farmers to catch rabbits in their cultivated fields. Inside the Medina in cages on the pavements in front of stalls were many tortoises and cages of live chameleons and other lizards for sale as pets.

MARRAKESH

A city of almost two million people, Marrakesh's prosperity is due to tourism. Four-and-a-half times as many tourists, based on bed-nights, visit Marrakesh than Fes, and there are many more items made from wildlife products, some of which include ivory and rhino horn.

Marrakesh's Berber origins in the 11th century led to its rise as a medieval

metropolis, attracting caravans bringing in gold, ivory and slaves from the Mali and Songhai empires. There are spectacular ruins, palaces, mosques, madrasas, gardens, and the most famous attraction of all, Djemaa el Fna in the centre of the Medina. This is a large square, the name of which means 'the Assembly of the Dead'; it was the site for public executions up until the 19th century.

Depending upon the time of day, the square is crowded with musicians and story-tellers, traditional restaurants, orange-juice vendors, water sellers, scam artists, pick pockets, acrobats, women artists applying henna from syringes to decorate women's hands and feet, snake charmers, entertainers

CONSERVATION



PHOTOS BY: ESMOND MARTIN

TOP: Ivory sculptures, such as these from West and Central Africa, were offered for sale in a Marrakech antique shop for between USD 1,000 and USD 2,000 each.

BELOW: There were 18 traditional medicine stalls in Djemaa el Fna in Marrakech during our visit that offered a variety of items for sale; half were selling animal products, such as dried hedgehogs, porcupine quills, antelope horns, ostrich legs and eggs, tortoise shells, and dried lizards, especially chameleons.

with Barbary macaques on lead ropes, Berbers selling traditional medicines made from animal products and many stalls that appear at dusk to cook Moroccan specialities for diners. From early morning until after midnight, the square is alive with all sorts of activities, legal and illegal, mostly for the attention of Moroccans but also for foreigners.

During daylight hours, one can see Barbary macaques being led around the square to attract the attention of foreigners who may wish to take photographs and give an appropriate tip. The macaques are mostly caught in the Atlas and Rift Mountains. We asked the manager of these monkeys, who calls himself the *Marchand des Singes*, what price he can sell a monkey for and he said an adult was USD 482 and an untamed baby one USD 422 before bargaining. Foreigners sometimes buy the monkeys to take home, unlike the Moroccans who generally fear handling them.

Competing with the macaque keepers for tourist money are snake charmers



PHOTO BY: ESMOND MARTIN

These 60-cm ivory tusks are actually musical instruments with a hole for blowing (called side-blown horns) and were selling for about USD 1,000 each. Also there were old ivory bangles for around USD 500 each before bargaining. All were made in Central and West Africa.

who display horned vipers, cobras and other species on the paved ground in the square. These are caught in the desert around Marrakesh. The poisonous snakes look docile, apparently because they are fed a depressant to reduce their movement. Few tourists are ever bitten by them. On one morning we counted 44 snakes being displayed; we saw additional ones kept in boxes.

In another part of the square, a group of men, mostly Berbers, offer animal and plant parts for decoration, for white magic and also for traditional medicines for Moroccans. Of the total of 18 such stalls, half displayed animal products for sale. The two most popular items were dried chameleons (30) at USD 5.0 each in five stalls, used against black magic or for good luck, and hollow ostrich eggs (25) at USD 16 each also in five stalls, to cure indigestion. There were also dried ostrich legs for USD 30 each, the fat of which is used to cure rheumatism, and we saw dried hedgehogs used as hair conditioner

for USD 9.0. The vendors sold various wildlife items for decoration, such as porcupine skin for USD 12 and quills for USD 2.0; antlers for USD 14 each; gazelle horns for USD 25 a pair and their skins for USD 54; stuffed iguanas for USD 10; and pairs of wild boar tusks for USD 120.

Branching off the square are narrow streets lined on both sides with hundreds of small shops and stalls displaying rather poor quality souvenirs for the foreign tourists and consumer goods for Moroccans. There were some ivory and rhino horn items, and we also found some in the Ville Nouvelle, the newer part of the city built by the French in the early 20th century.

We found 102 ivory items made before 1990 and 13 made after 1990 on display for sale in Marrakesh. Of those made since 1990, there were three fruit carvings from China and 10 objects from Central and West Africa (six female statues, one bangle, one ring, one carved and one polished tusk). In

total there were 40 carvings of people, 25 wrist bangles, seven daggers with ivory handles, five arm bangles, four rifles with ivory stocks, four knives with ivory handles and 30 other items. The rifles and daggers were made in southern Morocco, while nearly all the other items named above were made in Central and West Africa. The least expensive were simple earrings and pendants for USD 102. The most expensive was a European Art Deco 30-cm-tall statue of a female priced at USD 43,373. Old Berber-made antique weapons were even more expensive than in Fes, ranging from USD 14,000 to USD 31,000.

Ivory items in Marrakesh were all generally more expensive than in Fes. An old bangle, 1½cm in width, was USD 66 in Fes and about USD 465 in Marrakesh. An old carved tusk of 40-50 cm was USD 1,413 in Fes and USD 2,265 in Marrakesh. In Marrakesh the new ivory items were much more expensive than the old. A new 1½cm bangle was about USD 900, nearly double the price of an old one, while a 12½cm carving of a human figure was about USD 900 for an old one and USD 2,000 for a new one. This is mainly because the raw material is much more expensive nowadays, but perhaps also because there are many wealthy Europeans living in Marrakesh who collect Moroccan artefacts.

The ivory items for sale that were crafted in West and Central Africa are

usually transported by citizens from the countries in these regions to Marrakesh or they are brought back by Moroccan businessmen. One Tuareg vendor told us that he had relatives in Mauritania and he consequently visited the country regularly and bought ivory objects (probably carved farther south) to sell in his shop in Marrakesh. We had expected that more West and Central Africans coming through Morocco would bring worked ivory to Morocco to sell illegally to help finance their journey to Europe looking for work, or when they travel through Morocco on their way to Hadj in Saudi Arabia. However, the Moroccan, Spanish and French authorities have recently cracked down on the illicit movement of these people.

Most of the customers for ivory items in Morocco are foreign tourists. It is not accidental that vendors in Marrakesh offered four times as many ivory objects for sale as Fes because Marrakesh receives so many more foreigners. Vendors told us that the main buyers of ivory items are visitors from southern European countries, France, Italy and Spain, followed by Germans and then Americans. We saw no Chinese on our visit; they have been encouraging ivory sales in many other African countries.

The Marrakesh antique/souvenir shops also displayed old weapons with rhino horn hilts: 10 daggers and five swords, almost four times as many as we saw in Fes. All were at least 80 years old, according to the vendors. They ranged in price from about USD 5,780 to USD 26,500 for the daggers and from about USD 6,800 to an unusually high price of USD 120,000 for the swords.

As in Fes and other main cities in Morocco, vendors in Marrakesh sell on the pavements in the Medina live animals for pets, such as tortoises for USD 6-12 and chameleons for USD 12-26, common birds and squirrels, mostly to Moroccans and but occasionally to foreign tourists. ●

**We wish to thank the
Aspinall Foundation for
funding our fieldwork in
Morocco in December
2011.**

Wildlife regulations in Morocco

Trade in wild animals, dead or alive, and their products is illegal in Morocco, and it is illegal to display them for sale. No imports or exports of endangered wildlife products are allowed, according to CITES, of which Morocco has been a member since 1976, except for antiques and if a permit is granted. However, the Moroccan government has very rarely issued such a permit, and people find it relatively easy to smuggle out antique ivory and rhino horn items in their luggage.

Most vendors in Fes and Marrakesh were aware that their wildlife products were illegal, and those selling ivory were particularly wary. One antique dealer in Fes, for example, told us that in 2010 he sold an ivory statue carved in the Cote d'Ivoire to a foreigner, agreeing to post it to him. Customs, however, confiscated it so the vendor felt ethically obliged to return the money to his client; the vendor was not allowed to get his ivory statue back from Customs, but such confiscations are rare. In Marrakesh the managers of the more prestigious antique shops immediately warned us against purchasing items made with wildlife products for export, explaining that there was a law against so doing. In other antique/souvenir shops selling ivory, vendors were concerned by our questions and a few became uncooperative. Some did not want to give their shop addresses, presumably in fear of prosecution. One owner of an antique shop chased us into the street to find out what we were doing - a common hazard for researchers asking too many sensitive questions!

The present law does not enable government inspectors to enter shops to look for wildlife or wildlife products without permission from the owners. Officials told us that this law will change when the new wildlife bill is passed. The present law does, though, permit government authorities to inspect and confiscate illegal wildlife cargo at the international land borders, airports and seaports.

The Moroccan government does allow some sport hunting for certain species, usually restricted to certain times of the year. The main quarryies are wild boars, hares, birds (including partridges, pigeons, quails, ring doves and turtle doves) and vermin. These hunted animals, however, cannot be sold for any purpose.

All trade in wild animals and their products in Morocco is illegal. While a few vendors were aware of possible repercussions regarding their illegal sales of wildlife products, such as ivory, and did tell potential customers that taking them out of the country is not allowed, most were unconcerned about displaying and selling their goods as the laws on wildlife trade are commonly ignored. It is not known what effect wildlife sales have on the indigenous species in Morocco, but in the 20th century, Morocco lost its lions (probably in the 1920s) and leopards (in the 1980s) from hunting for the skin trade as well as from habitat loss.

Government officials involved in wildlife matters admitted that they need to tighten law enforcement, knowing that animals and their products are illegally for sale in the Medinas of the main cities, not just for Moroccan customers but also in some souvenir shops for foreign tourists. Officials need to inspect outlets with wildlife and wildlife products for sale and warn vendors against the trade, and if they persist, confiscate their items.

Morocco somewhat surprised us by its small number of ivory artefacts and wildlife for sale. We had expected to find much more evidence of north-bound economic migrants from Central and West Africa using ivory to pay for their journey. We do not know if the migrants are themselves aware of the risk bringing in ivory or whether they are searched at border posts. While the Moroccan authorities have obviously managed to educate local dealers on the law against wildlife trade, many dealers flout it. The authorities need to be stricter to ensure that Morocco does not become a market nor a conduit to other countries for African wildlife and wildlife products, especially ivory. ●

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PHOTO BY: SUZI EZSTERHAS

A nursing female and her foal.

Grévy's Zebra

Fragile flagship of community conservation

THE AUTHOR



BELINDA MACKEY was born and raised in Kenya. She has an MSc in Conservation Biology from the University of Kent, UK and is a Certified Educator in Holistic Management. She is Co-Founder and Executive Director of the Grevy's Zebra Trust with nearly a decade of experience in community-based Grevy's zebra conservation. She was a founder member of Kenya's Grevy's Zebra Task Force in 2004 and was part of the team that drafted the five-year strategy for Grevy's zebra conservation and management in Kenya, led by KWS. She sits on the Grevy's Zebra Technical Committee and Disease Response Committee and is a member of IUCN's Equid Specialist Group.

It is those large, fuzzy, expressive ears that are perhaps the most distinguishing and appealing feature of the Grévy's zebra. Those ears, together with the fine intricate stripes and strong neck with its impressive striped Mohican mane; the gleaming white belly, and the charcoal dorsal stripe bordered by a white space at the rump which glints in the sunlight – hence the Samburu name “Loiborkurum” meaning “white-rumped”.

The Grévy's zebra is the largest and most endangered species of zebra in the world, one that is uniquely adapted to survive in the arid and semi-arid zones of the Horn of Africa. Locally extinct in Somalia and Djibouti, their range has shrunk dramatically with three populations remaining in Ethiopia and the rest in Northern Kenya. With global numbers at 15,000 in the late 1970s, Grévy's zebra now stand at just over 2,770, with more than 90% of them found in Kenya.

Historically, Grévy's zebra were hunted for their striking skins but with trophy hunting banned in Kenya in 1977, this threat no longer exists. Current threats facing the species, ranked according to severity include: habitat loss as a result of land

degradation, a reduction in access to water, competition with livestock, killing for food and medicinal purposes, disease, and localised predation. Hybridisation with the plains zebra is considered a secondary threat.

The recent estimate of 2,774 Grevy's zebra was the output of a regional workshop in March 2012 to review the expiring five-year conservation and management strategy for Grevy's zebra in Kenya, in which updated figures for Ethiopia were also presented. In 2008, the Kenya Wildlife Service (KWS) launched a five-year conservation strategy for Grévy's zebra which was developed by the stakeholders on the ground and has been actively adopted. With 95% of Grévy's zebra range falling in community-owned lands, the strategy promotes the lead role of communities in Grévy's zebra conservation. This article highlights the work being done by communities in Kenya to address the most serious threats.

In 2000, Grévy's zebra became a flagship species among pastoral communities for conservation in northern Kenya. The species was used to raise local awareness of the opportunities and benefits that can result through actively conserving wildlife. Nationally and internationally,



PHOTO BY: JAMES WARWICK

TOP: Grevy's Zebra Scout Ngeeti Lempate monitoring Grevy's zebra.

BELOW: Warriors in a holistic planned grazing workshop.

Grevy's zebra was used to generate interest among donors to support community conservation efforts. The Grevy's Zebra Scout Program which started in 2003 collected data that helped secure support for three of the Northern Rangelands Trust (NRT) community conservancies in Samburu because the results showed these areas to be of critical importance for Grevy's zebra.

By 2006, international interest in Grevy's zebra conservation had undergone a period of impressive growth and a more dedicated focus was warranted. The Grevy's Zebra Trust (GZT) was established in 2007 and works exclusively with communities to conserve Grevy's zebra and its fragile habitat. GZT employs over 50 people from communities in Grevy's zebra range, and operates across an area of more than 10,000 km². GZT's multi-faceted programs engage all social groups, including men, women, warriors and children.

The most large-scale and serious threat to the future survival of Grevy's zebra in Kenya is loss of habitat evidenced by nearly 100 carcasses that were found at the height of the 2009 drought. GZT launched its habitat restoration program in partnership with Westgate Community Conservancy and NRT using holistic planned grazing. Livestock is considered the solution to healing land and is used as a tool

with two functions: animals follow a plan where time for plant recovery is scheduled; and, animals herded tightly together break up hard, capped soil to allow precious rainfall to be captured instead of running off. Bomas are strategically placed on bare ground and moved weekly to nourish as large an area as possible, and forage availability is measured based on livestock and wildlife needs.

In 2010 Westgate implemented its first dry season holistic grazing plan in its conservation buffer zone. The Conservancy also cleared 250 ha of invasive *Acacia reficiens* and planted perennial grass in the bare ground underneath. A second grazing plan was developed this year and the combination of these practices has seen



PHOTO BY: GREVY'S ZEBRA TRUST

WITH PASTORALISTS USING WATER THROUGHOUT THE DAY, GRÉVY'S ZEBRA ARE COMPELLED TO DRINK AT NIGHT, THUS INCREASING THEIR RISK OF PREDATION. THE COMBINATION OF HABITAT LOSS AND WATER SCARCITY FOR GRÉVY'S ZEBRA IS PARTICULARLY SERIOUS FOR NURSING FEMALES AND THEIR FOALS.

an overall increase in plant cover and the re-establishment of indigenous perennial grasses. Grévy's zebra moved into the area, having never previously been resident and the health of the holistic cattle herd also dramatically improved. This innovative and exciting model is being scaled up in four more NRT conservancies, including Meibae, Lekurruki, Mpus Kutuk and Kalama all of which fall within core Grévy's zebra range.

Water resources play a significant role in determining the stability of Grévy's zebra populations within pastoral areas. Access to water has reduced because of uncontrolled upstream abstraction which has converted the once perennial life source of Samburu, the Ewaso Nyiro River, to a seasonal one. The widespread

development of water sources such as bore holes and dams has also increased the spread of settlement across the landscape, resulting in poorly controlled grazing which further escalates land degradation, and results in silted dams and a falling water table especially during the dry season. The habitat restoration work is therefore also critical in addressing the issue of water. Proactively managing for dry season water access is a priority and in 2011, 36 water points were continuously managed for Grévy's zebra between June and October by GZT and its community partners.

With pastoralists using water throughout the day, Grévy's zebra are compelled to drink at night, thus increasing their risk of predation. The combination of habitat loss and

ABOUT ZEBRAS

There are 3 species of zebra: plains (or Burchell's) zebra found in the grasslands and savannahs of sub-Saharan Africa; mountain (or Hartmaan's) zebra found in the mountain grasslands of South-West Africa; and Grévy's zebra found in the arid and semi-arid grass-shrubland of northern Kenya and Ethiopia. Grévy's zebra is the largest and most endangered of the three.

The overlap between plains and Grévy's zebra occurs at the edge of the Grévy's zebra's southern range. Grévy's zebra expanded their range south in the 1970s, thought to be the result of increasing pressure from people and livestock. Over 80% of Kenya's Grévy's zebra are found in the Laikipia-Samburu ecosystem with smaller populations in Isiolo, Marsabit and Meru and Garissa Districts. Small, introduced populations occur outside the natural range in Tsavo and Oserian Wildlife Sanctuary.

In Ethiopia Grévy's zebra are found in three distinct populations: Alledoghi Wildlife Reserve, Chew Bahir (formerly Lake Stefanie) and Sarite. The two latter southern populations are thought to connect with the Kenyan population.

Plains and mountain zebra exist in tight-knit groups with harems whereas Grévy's zebra form fluid social groups. Adult breeding males defend large resource territories and will not tolerate the presence of bachelor males if sexually receptive females are present. Unlike plains zebra which must drink every day, Grévy's zebra can go up to five days without water with the exception of lactating females. Foals tend to be born at the same time so lactating females which share common resource needs stay together in groups.

For more information on Grévy's zebra and the national conservation strategy for Kenya visit :

www.grevyszebratrust.org and www.kws.org



PHOTO BY: SUZI EZSTERHAS



PHOTO BY: GREVY'S ZEBRA TRUST

Grevy's Zebra Ambassador Petro Lechoe in El Barta.

CONSERVATION

water scarcity for Grévy's zebra is particularly serious for nursing females and their foals. Unlike other classes of Grévy's zebra, which can go up to five days without water, lactating females must drink at least every other day. During extremely dry conditions, the increasing separation of grazing and water resources forces females to make large-scale and frequent trips between the two resources. These journeys lead to loss of body condition and can result in high foal mortality and increased vulnerability of both mothers and foals to disease. Kalama Community Wildlife Conservancy is an excellent example of where provision of artificial water points within its conservation area has produced a positive response from Grévy's zebra; breeding females are attracted to the area to take advantage of diurnal water access and forage that is in close proximity.

Most competition with livestock comes in the form of displacement and harassment. With improved rangeland management, displacement will reduce especially within community conservancies. Thanks to the work of conservancy and GZT personnel, conservation awareness in many communities is high and people demonstrate wildlife-friendly behaviour, so harassment by herders is minimal. Scaling up awareness and behaviour change is therefore a priority to ensure that people co-exist peacefully with Grévy's zebra and other wildlife.

In Samburu culture, it is taboo to eat animals with a single hoof

like equids. Other communities however do utilise Grévy's zebra and its products for food or for treating diseases such as tuberculosis though more understanding of this aspect of use is required. With the widespread availability of firearms today, Grévy's zebra make an easy target for hunting. In El Barta, where Grévy's zebra are seriously threatened by killing for subsistence meat, GZT has set up a program using Grévy's Zebra Ambassadors employed from the local communities, including those that have traditionally hunted wildlife; engaging them directly in the program has significantly increased community responsibility for protecting the species, and has improved local vigilance. GZT works closely with KWS in this region undertaking joint patrols on a regular basis and eight Ambassadors will soon be enrolled at the prestigious KWS Manyani Training School.

In 2006, an anthrax outbreak claimed over 50 Grévy's zebra in Samburu. A comprehensive vaccination campaign targeting the affected Grévy's zebra population brought the outbreak under control but highlighted the need for a better understanding of the disease dynamics in Grévy's zebra. Within the framework of the national strategy is a Disease Response Committee led by KWS's veterinary department, which is drawing on local and global expertise in refining its disease investigation and response strategy.

All of these conservation actions require monitoring, and within the

national strategy sits the Grévy's Zebra Technical Committee, chaired by KWS. Close coordination between these agencies under the umbrella of the committee has led to several highly successful collaborative research projects, including the Grévy's zebra Collaring Project and the establishment of a National Grévy's Zebra Identification Database. Thanks to the cooperative spirit of this committee, the gap between cutting-edge science and hands-on conservation is being successfully bridged. It also ensures that scarce resources are not duplicated and that the best use of expertise from different fields is made.

The next five years of the national strategy promises exciting developments in both on-going and new conservation work as regional Grévy's zebra conservation stakeholders strive to ensure increasing populations of Grévy's zebra within their natural range in Kenya and Ethiopia. ●

The following institutions sit on the Grévy's Zebra Technical Committee:
African Wildlife Foundation, Denver Zoo, Grévy's Zebra Trust, Kenya Wildlife Service, Lewa Wildlife Conservancy, Marwell Wildlife, Nature Kenya, Northern Rangelands Trust, Princeton University.

Rikapo Lentiyo and Belinda Mackey locating a collared Grévy's zebra in Westgate Community Conservancy.

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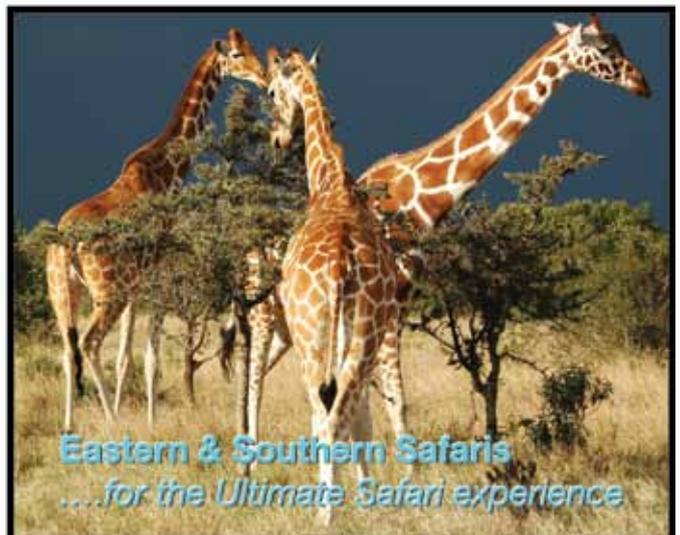
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Tiger cake and rhino horn – a walk on the Asian wild side

THE AUTHOR



KARL AMMANN is a wildlife photographer and film-maker who lives in Nanyuki, Kenya. He has used his skills to campaign for cheetahs, apes and rhinos and against the bushmeat business. His books, with Dale Peterson, include *Eating Apes* and *Consuming Nature*. He has received world-wide recognition, notably as one of *Time Magazine's* Heroes of the Environment in 2007. You can read more about his work on www.karlammann.com

Two years ago I was filming in a new casino town on the Laos/China border. These new enclaves are built on leased territory, like Macau, and all laws go out the window. Gambling, prostitution, drugs and illegal wildlife consumption become the main economic activities and these new towns become hubs for all kinds of wildlife-related activities including the establishment of bear bile farms. While we walked the streets we found two baby Clouded leopards hidden in a cardboard box. I took them out and played with them while the camera was running, before the owner started protesting and put an end to it.

In the meantime a lorry driver, who had witnessed the commotion, approached our translator. He told

our guide that if we were interested in these cats there were two tiger cubs a few hours away that were for sale. He gave us the address in case we were interested and we went off to find the place towards the centre of Laos. We got there and were told that the cubs had already been sold to a Vietnamese buyer for USD 4000.

I decided to follow up on the story on a later visit and hired the hunters who had killed the mother tiger with a landmine, after using a cow as a bait, and then caught the cubs and sold them via family members living near the main road. We also hired a Vietnamese translator who was going to try to help track down these cubs. We travelled to the area where the mother was killed and then crossed into northern





PHOTOS BY: KARL AMMANN

Fake African Rhino Horn with Asian features for sale in Laos.

Vietnam. Our translator, who had also trafficked wildlife and tiger bones in the past, introduced us to some of the well-known dealers in a nearby town. We were offered tiger cake (boiled down from tiger bone), tiger claws and teeth and also a slab of rhino horn marked as weighing 89 grams.

It was then that I realized that wildlife traders in these parts were not just dealing in one product but any wildlife items, which would offer a nice return. Clearly this was a given, with the high profit margins and little risk of there ever being any enforcement of prosecution (tiger bone cake pieces and tiger claws and teeth were in a special sales display in the lobby of the hotel we stayed in, and the menu was full of 'forest food' items) The next morning we sent our translator back to the dealer who had the slab of horn to buy USD 100 of what he said was, and what looked like, rhino horn. The transaction

\$40,000

Price per kg of Asian horns coming mostly from India via Burma and Laos.

\$20,000

Price per kg of African horns.

was documented with a hidden camera and then he invited our man to come to the kitchen where a tiger skeleton was in the process of being boiled down into tiger bone/cake.

It also became clear that, irrespective of tigers, ivory or rhino horn products, the traders we would meet were all potential sources of information for

ALL of these items. So while trying to track down the tiger cubs we also started looking into rhino horn prices, availability, usage, etc.

We then decided to do a survey of the Traditional Chinese Medicine shops in the old town of Hanoi. When it came to rhino horn we were clearly told that it did not have any kind of aphrodisiac qualities and that it did not really cure cancer but that it did reduce fever and cleansed the body, especially after bouts of excessive alcohol, food and drugs. Since this was the start of the new year's festivities, one dealer invited us to his family quarters above the shop for a glass of rice wine and then freely showed us tiger bone cake, claws, a rhino horn, elephant skin etc. After drinking some of the rice wine and again buying a very small sample of what he presented as rhino horn. The lady of the house came with a brown plastic bag which she pulled



PHOTOS BY: KARL AMMANN



SINCE THE ORIGINAL TRIP IN 2010 I HAVE BEEN BACK THREE MORE TIMES CONVINCED THAT VIETNAM IS TODAY ONE OF THE KEY END CONSUMER COUNTRIES FOR RHINO HORN, TIGER BONE AND BEAR BILE PRODUCTS (INCLUDING FARMS WHERE SOUTH KOREAN TOURISTS GO SHOPPING BY THE BUS LOAD).

TOP LEFT: A crate of tiger bones goes for about USD 15.

BOTTOM LEFT: Fake African rhino horn Fake Asian rhino horn and grinding plate.

BOTTOM RIGHT: Some Asian rhino horn tips for sale bottom left and worked into rings like diamonds.

TOP RIGHT: Chinese tourist negotiating for tiger tooth in Laos.

from a top shelf and offered us all a sampling of powdered horn, which she instructed us to sprinkle into our rice wine and explained that, irrespective of our alcohol consumption during the holidays, we would never have a hangover.

The man of the house said that rhino horn was only for the very rich and our guide backed it up with some anecdotes of his own, illustrating that the demand on the Vietnam side was already high and increasing in line with the affluence of some of the elite. Handing out rhino horn had become one way to illustrate that the individual in question ‘had arrived’.

We later confirmed this when talking to dealers who did not want to discuss

selling small samples but were only interested to deal in big piece items in the thousands of dollars. It was clear that they were used to negotiate with people of means and not tourists looking for a few grams. Possession of rhino horn was considered a status symbol on a par with a Mercedes Benz or diamond ring.

We were told that rhino horn pieces were also used to bribe officials and was offered generally as a present to people in power.

Since the original trip in 2010 I have been back three more times convinced that Vietnam is today one of the key end consumer countries for rhino horn, tiger bone and bear bile products (including farms where South Korean



TOP: Some of the very bad fakes. However the elephant tooth underneath is real.

BELOW: There are no real customs checks at the Laos Vietnam border and there was no control of these motorbikes.



PHOTOS BY: KARL AMMANN

tourists go shopping by the bus load). With each trip it became more and more evident that rhino horns on sale appear to be mostly fake (the samples from the first trip when exposed to DNA analysis all turned out to be pieces of a water buffalo horn). So on subsequent trips my translators and I started to become more discriminating and telling dealers that we had been taken for a

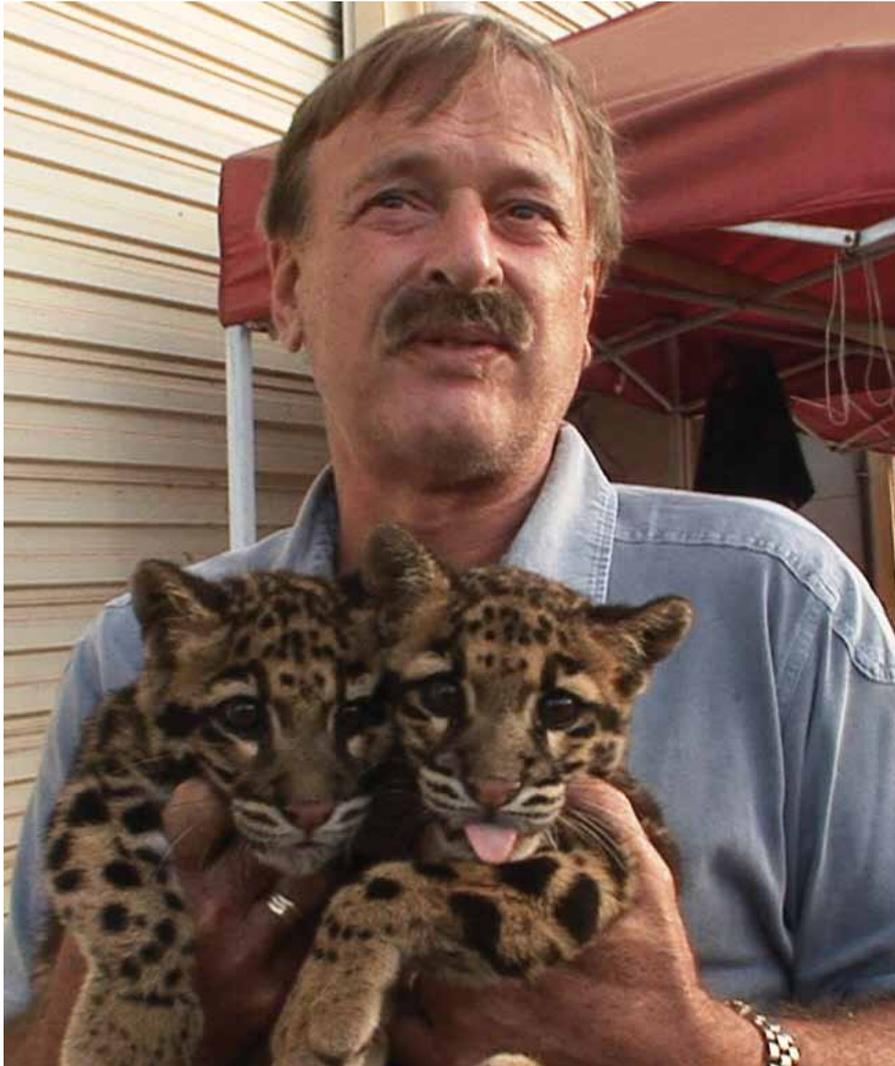
ride with buffalo horn in the past and we wanted to see and discuss prices for the real stuff. Our local translator got on the Internet and found 35 players advertising horn via the web. We met some of them. No dealer was worried about enforcement being triggered by offering us a product illegal under national and international laws. But they didn't think we had a lot of money to spend, and were suspicious of foreigners.

So we sent off our local investigator on his own with a hidden camera to do some negotiations to buy horn. We then reviewed the material with him and wrote down a transcript of what was discussed and recorded.

We had now refined our cover story. Our local investigator explained that he was looking for horn for a friend in Yunnan province who had been cheated with fake horn and only wanted very small samples to have it checked out

and to come back for more if it turned out to be the real thing. On the last trip we also extended this survey to some of the main towns in Laos and found that some of the key dealers used the even more relaxed enforcement regime in Laos to handle their imports and then distribute, without any problems, in neighbouring China and Vietnam. Again we found rhino horn in a range of outlets. It all was said to be from Asian animals with many of the sellers insisting there were still Java and Sumatran rhinos in the hill tribe areas of Laos. These animals are officially extinct.

We were shown one complete African horn, which was a good imitation but clearly fake. We deduced that a majority of the horns on sale were fakes. We even filmed in a factory where they prepared the tips of water buffalo horn to make them look more polished and more like rhino horns.



TOP: The writer playing with the baby clouded leopards at Boten which started all this.

We saw dozens of such pieces in the production stage.

We got a lot of very interesting information from these recorded conversations, which included what appeared to be some of the key dealers. Some of the basic facts that came out via this kind of more informal approach to researching demand and supply characteristics are:

- Rhino horn is openly available, not just in TCM shops but also in some jewellery outlets and souvenir markets generally visited by tourists from the region.
- We did not hear of a single case of active enforcement, any prosecution of any hunter or dealer.
- The last indigenous Vietnamese rhino was declared dead shortly before our first visit.
- A lot of dealers know they are handling fake horn products and consider themselves to be 'legal'.
- Most of the horn on offer tends to be cut slabs or the tips, indicating that it mostly comes from polished and modified water buffalo horns.
- When asked for the easier-to-identify base of the horn, dealers say it is the most valuable part and always sold first and only tips are left.
- Wholesale prices per kilo for a large chunk of a horn were pretty uniform at USD 20,000 for African horn and USD 40,000 for Asian horn.
- TCM dealers trade in small quantities.
- Besides this retail trade for medicine there is a market for big players buying whole horns and having trusted dealers doing the verification for them. These players include the

- nouveau rich with a Rolls Royce in the car park.
- A dealer in the north of north Vietnam told us that a drug enforcement unit recently visited him and took some of his horn telling him that he would be paid later, indicating corruption in law enforcement.
- Grinding plates have now also gone "up market", with a new version made out of Japanese clay which was introduced recently. The pamphlet, which comes with the very fancy packaging, also includes images of a live rhino and promises that horn can 'cure incurable diseases'.
- The latest gadget is a special contraption that can grind down the horn into powder.
- The main import dealers are well-established businessmen involved in all kinds of related activities including other contraband. ●

During a recent conservation meeting in Bangkok, sponsored by the World Bank, and with Interpol, CITES, and the World Customs Union in attendance, I asked the chair why the Laotian delegate could not be confronted with some of the above evidence and facts (including the open display of ivory in many stores in his country) as proof of the absence of any kind of political will to enforce international conventions such as CITES.

The answer was: Some of these officials attending here are as frustrated as you and I are. The question I did not ask but should have is: Why do we spend hundreds of thousands of dollars on such meetings in five star hotels if the attendees are not decision makers and have no power to help create real political will to mount real enforcement campaigns?

If at this level it is not possible to get "the real decision makers" to attend then what is the point of the meeting in the first place?

Elephant bushmeat: new threat to elephants

THE AUTHOR



DAN STILES has been investigating the ivory trade and other illegal wildlife trade around the world as an independent consultant since 1999. He was IUCN Project Consultant in 2010–2011 for the elephant meat trade project and is a member of the International Union for Conservation of Nature (IUCN) African Elephant Specialist Group. Trained as an anthropologist, Dan spent many years researching African and Asian hunter-gatherers and nomadic pastoralists, concentrating on their management of natural resources. He has previously worked for the U.N. Environment Programme, Unicef, the U.N. Development Programme, TRAFFIC and several NGOs.

In December 2011 the IUCN African Elephant Specialist Group published the results of a study funded by the CITES-Monitoring of Illegal Killing of Elephants (MIKE) programme entitled 'Elephant Meat Trade in Central Africa'.¹ I supervised the project, and research teams undertook hunter and meat and ivory trader interviews around the MIKE monitoring sites of Boumba Bek National Park in Cameroon, the Dzanga-Sangha Complex in Central African Republic, Odzala-Kokoua National Park



Elephants are most often hunted in clearings in the forest.

PHOTO BY: DAN STILES

in Republic of Congo (ROC) and Okapi Faunal Reserve (OFR) in Democratic Republic of Congo (DRC). Bushmeat vendors and meat consumers were interviewed in regional towns and large cities (Yaoundé, Bangui, Brazzaville, Pointe-Noire and Kisangani), and in some places ivory craftsmen, traders and vendors were interviewed (see Swara 2011:1 for background).

The purpose of the study was to find out the importance of meat as a cause of elephant poaching, as opposed to ivory or conflict with humans. The hunters (a.k.a. poachers) interviewed were in most cases local villagers, so the results of this study are inapplicable to professional poaching gangs such as the infamous Sudanese Arabs in Central Africa and Somalis in East Africa, who

travel very long distances. As suspected, local hunters confirmed that ivory was by far the primary purpose of a dedicated elephant hunt. Only three of 54 poachers interviewed said that their last hunt was primarily in search of elephant meat. But all the others stated that meat was the second most important reason for killing elephants.

Simple economics explains why meat is so important. Hunters around the four study sites sell smoked elephant meat to bushmeat traders for an average USD 2.60 a kg and directly to consumers for up to USD 5.0 a kg. A bull elephant can provide about 1,000 kg of smoked meat, which means up to USD 5,000 could be realised from a large elephant carcass. In reality, much less meat was usually taken, ranging

¹Summary report available at <http://www.iucn.org/dbtw-wpd/edocs/SSC-OP-045.pdf>. There are also four country reports.



PHOTO BY: KARL AMMANN

Elephant meat is usually smoked at the kill site to preserve it.

from an average of 180 kg per kill at Boumba Bek up to 361 kg at Okapi. Only at Okapi did hunters report taking the full 1,000 kg, on one occasion. Some of the meat was consumed by the hunting party and/or shared out to others, but most was sold.

Five thousand dollars is more than can be earned by hunters from the ivory of a single elephant, except for the very largest of tusks. And in Central Africa elephant meat is very popular, where demand usually exceeds supply. So why aren't more elephants killed for meat? There are basically three reasons:

(1) Logistics. One man can carry on average 40 kg in deep forest. It would therefore require 25 porters to haul a tonne of meat, which is almost impossible to find if the carcass is far from a village or

road, which is often the case.

(2) Security. Large hunting parties attract attention. Smoking meat takes two to three days, with smoke and the smell signalling the camp location. Rangers patrol protected areas, so poaching parties tend to be relatively small and keep on the move. Hunters in three of the study sites reported kills in which no meat was taken because of security concerns.

(3) Circumstances. In three of the study sites, 95% of the hunters were working for a *commanditaire*, a person who ordered and financed the hunt to obtain the ivory. Only in Odzala did most of the poachers (61%) hunt elephants for themselves, probably because they did not need to be subsidised. If the

poachers are paid to bring back tusks, they will kill many elephants on a single hunt and not be able to bring back large quantities of meat. Nevertheless, meat was an important part of the remuneration package for poachers.

In addition, ivory is a much more valuable commodity in terms of unit weight, at least ten times that of meat per kilo in price.

We also found that elephant hunts differ significantly from subsistence or small game commercial hunting. Smaller animals are more often caught with snares, nets or shot with shotguns. Except for Pygmy net hunts, small-game hunting parties are only one to three people, last only one to two days and travel short distances (<20 km).



PHOTO BY: DAN STILES

Bushmeat is the most common source of protein in the Congo Basin. As wildlife is cleared out of the forests, elephants will increasingly be targeted for meat.

SINCE DEMAND FOR ELEPHANT MEAT EXCEEDS SUPPLY, THERE IS GREAT POTENTIAL FOR THE TRADE TO GROW, PARTICULARLY AS OTHER BUSHMEATS BECOME SCARCER AS A RESULT OF OVEREXPLOITATION PROPELLED BY HUMAN POPULATION GROWTH AND LACK OF PROTEIN ALTERNATIVES.

Elephant hunting parties are larger (mean=7), last longer (mean=15 days) and travel longer distances (>50 km). The two most common weapons used for elephants were the AK-47 and a 12-gauge shotgun using bullets moulded from melted down shot. Large-bore hunting rifles were used less often because they are very expensive (>USD 1,200), as is the ammunition (USD 18-36 a cartridge). AK-47s have been proliferating in places where there has been armed conflict (CAR, ROC and DRC). Elephant hunts therefore necessitate considerable investments

in time and money, explaining why so many are subsidized by *commanditaires*. *Commanditaires* are most often government officials of some sort: administration, military, or police, followed by businessmen. In the DRC, military men are often the poachers.

A surprising finding was the popularity and high demand for elephant meat in towns and cities. I have received reports that elephants have been wiped out in large areas around the northeast DRC and southwest CAR border and the meat transported to Bangui. In Bangui we

found that elephant was the most expensive meat in town, averaging USD 6.94/kg, more expensive even than beef. Three years earlier, before the trucks supplied the markets, Bangui elephant meat averaged USD 12.65/kg. This price disparity was echoed everywhere we looked, except for southwest CAR, where elephant meat was the same price as other bushmeats. We found out this was so because Sudanese Arab poachers were in the area at the time of our survey (July, 2010) flooding the market with elephant meat. In Brazzaville elephant meat averaged USD 12.76/kg and in Yaounde over USD 10/kg.

High demand seemed due more to cultural reasons than to taste. In most urban settings elephant meat is rare, as most of it is consumed in the vicinity of the kill location and it is risky for traders to transport it. The meat derives from an infamously illegal animal, and the elephant is respected for its size and potential danger. All of these factors render the meat a prestige item. Ironically, it is most often served at



PHOTO BY: RICHARD LOKOKA

A research assistant in Okapi interviews hunters at the site of an elephant kill.

gatherings of high-ranking government officials, who can afford it.

Meat and ivory trade follow different paths after the hunter or first middleman. Elephant meat disperses quickly to several middlemen (often women), who take it to sell in local or regional markets and restaurants using a variety of transport (e.g. motorbike, rented car, public transport). Those who command ivory hunts resell the tusks usually to international traders, who export the tusks, or they resell to local ivory workshops. Larger tusks are exported while smaller, poorer quality tusks sell for local use. Tusks were exported to West Africa, to Sudan and Egypt, or to the Far East via East Africa. Fewer than 10% of first middlemen traded in both meat and ivory, all of them women.

Since demand for elephant meat exceeds supply, there is great potential for the trade to grow, particularly as other bushmeats become scarcer as a result of overexploitation propelled by human population growth and lack of protein alternatives. The trade would almost certainly increase if logistical constraints were eased (e.g. roads were

built offering easier access and egress) and/or security concerns lessened (e.g. ranger patrols and road check points decreased).

Weak law enforcement, corrupt government and military officials and lack of means of earning a livelihood were found to be critical causal factors in elephant poaching, as well as other forms of natural resource over-exploitation. Most informants in this study cited abuses or collusion by the authorities in illegal wildlife exploitation activities. They expressed dissatisfaction in the way natural resources were managed. Poverty and lack of alternative sources of income were cited as primary reasons motivating illegal hunting and product trafficking.

Forestry concessions were another important indirect causal factor in elephant killing. The three case study MIKE sites in the western Congo Basin are virtually surrounded by forestry concessions, with consequent construction of logging roads, other infrastructure, truck transport, the promotion of bushmeat hunting by truck drivers and the influx of immigrants in search of employment,

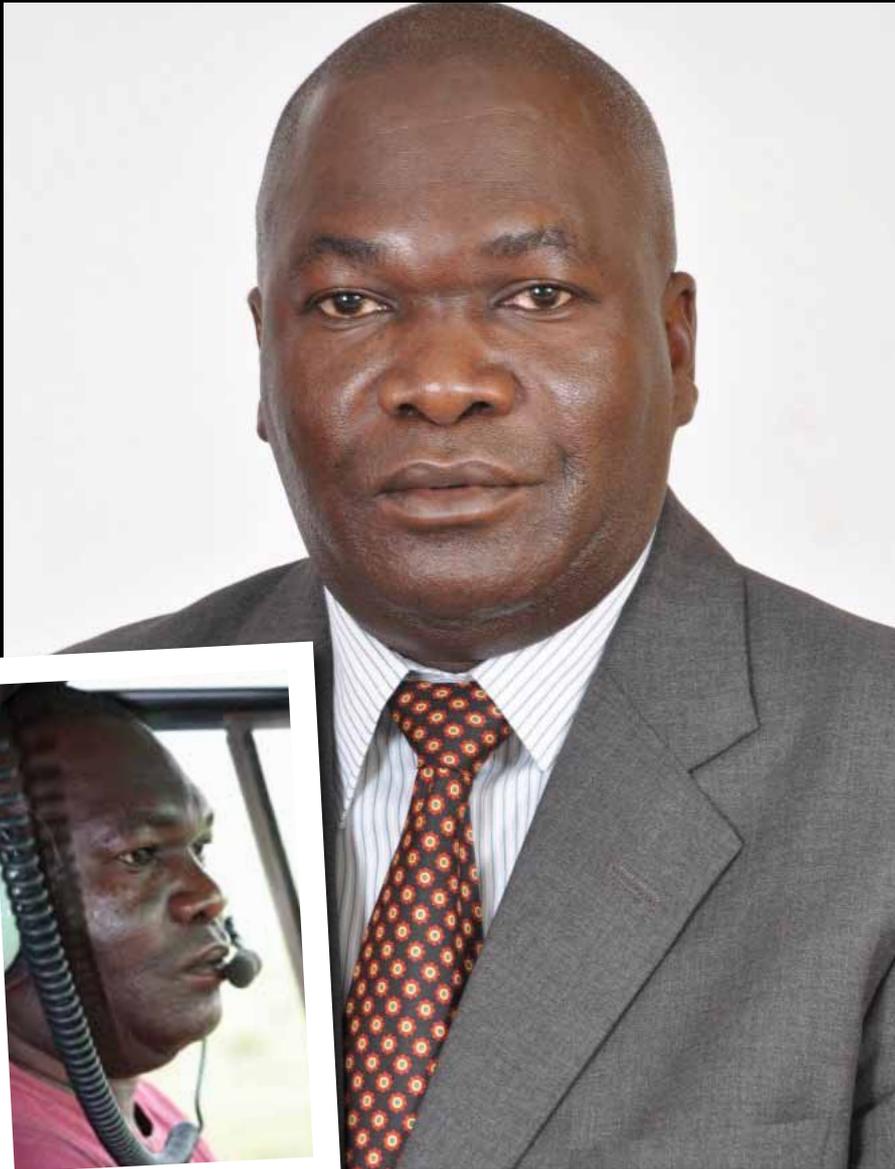
all of which creates a demand for bushmeat. Those without employment are attracted to poaching for meat, ivory and other trade products. Immigrant shop owners finance ivory poaching.

Mining is currently a minor causal factor around the western MIKE sites, with illegal artisanal miners near Dzanga-Sangha and Boumba Bek. Large mining developments are under way that will have a major impact on the entire western Congo Basin over the next two decades. Illegal mining has been taking place inside the OFR for almost 20 years, but it does not appear to stimulate elephant poaching.

Human population growth around protected areas is a major negative factor, as a growing population raises demand for bushmeat and the greater number of destitute people living near protected areas increases the number of those who will poach to survive.

If good governance, rule of law, economic opportunities for the populace and effective natural resource management can be achieved, elephants and other species will have a chance of survival. If not, elephant meat and tusks will continue to flow.●

INTERVIEW WITH DR. MALIK MARJAN'S



Carol Mbabazi recently caught up with Dr Malik Marjan, a south Sudanese wildlife biologist from newly-independent South Sudan who is documenting what he believes to be the biggest wildlife migration in the world. He's the founder of the New Sudan Wildlife Society and is an emerging explorer at the National Geographic Society (NGS), in Washington D.C. He divides his time between the field and teaching at the University of Massachusetts, Amherst, where he is a Wildlife Conservation Society Beinecke African scholar.

In South Sudan you've found perhaps the largest wildlife migration in the world, rivaling the Serengeti. But you believe your original estimate was on the low side. Why?

At the time we estimated the population of White-eared kob, Mongalla gazelles and Tiang, (an antelope related to the Topi) to be above 800,000 but we believe their numbers are well over one million. When we conducted the initial aerial survey we used one airplane, a Cessna 172, but when you are using a single aircraft and the herds below are massive, then those have to be verified by using several airplanes, which is what we are planning to do in the near future.

Could this also be true for the thousands of "lost" elephants, buffaloes and ostriches you've also located?

Yes, we believe that their population numbers are also higher than our earlier estimates.

What else did you discover?

We found Besia oryx and Nile lechwe—two very rare antelope species that some conservationists thought extinct in the region. We also located a quarter of a million gazelles, tens of thousands of Tiangs and thousands of elephants, reedbucks and ostriches.

What went through your mind when you first saw these massive herds of antelopes and gazelles from the airplane?

What came to my mind were feelings of success, happiness and joy. I felt that five years of foot safaris in South Sudan's wilderness were vindicated by these aerial surveys. It also came to my

mind that our conservation efforts would now be recognized by the international community and our conservation efforts supported.

Was this an unknown migration or did conservationist know about it from previous times?

There were previous studies on the migration of White-Eared Kob in South Sudan during the early to mid-1980s. These investigations were discussed in the doctoral dissertation of Dr. John M. Fryxell. But since then nothing was done and the landscape had seen heavy battles during the 22 years of the armed conflict.

Wildlife was probably the last thing on your mind growing up during the two civil wars?

My early childhood coincided with the first civil war, which started in 1955 and ended in 1972 with the signing of the Addis Ababa Peace Accord. During that time my mother took us to live in Khartoum but she could not cope with life there so we moved back to Wau town in Western Bahr El-Ghazal State in the South. We stayed there until that war ended it was only then that my sibling and I were able to attend primary school.

How else did the wars affect you?

The effects of the war were tough on our family. My father was killed at a wedding party in Wau in 1965 by the Sudan Army. That Wedding party was targeted because intellectuals, scientists, academics, politicians were thought to be attending. In this instance the groom was the son of a prominent chief. Then in 1991 my elder sister, who at the time was a nurse at Khartoum Teaching Hospital, was tortured by the state's security service. She remains physically traumatized.

Why did you return to south sudan in 1999 when millions of people were running away from the conflict?

I thought would I not be as effective professionally in my field of

specialization if I remained as asylum seeker in London! In any event, the liberated areas under the SPLM/ SPLA were safer than many places in the world. People were already living and working there. The SPLM/SPLA was, at that time, already receiving professionals who volunteered to return and help in rehabilitation, reconstruction and development work through civil societies and NGOs; therefore I thought of returning and starting the New Sudan Wildlife Society and wildlife conservation activities.

What was the state of wildlife conservation when you returned to south sudan in 1999 from studying in the U.K?

All conservation activities had stopped because of the second civil war. There was no money for running programs and there were only a few South Sudanese who were still involved in conservation. We would meet in each other's houses and then go on foot or by vehicle and count wildlife. People thought we were crazy. They reckoned that the rebels had slaughtered most of the wild animals for bushmeat and money from the sale of elephant ivory and rhino horn. But we proved that was not true.

What were some of the scarier moments during these initial ground surveys?

Landmines. There are thousands of landmines all over South Sudan. Fortunately, the locals helped us to avoid these areas. But there were other dangers like armed counter insurgency rebels but it's good that nothing happened to us!

What are some of your latest findings about antelope migrations in south sudan?

One of the great mysteries was where did these antelopes spend the long rainy season? Using tracking collars with GPS satellite technology we were able to find out. We placed the collars on individual antelopes in selected groups that were geographically separated from each other. We learned that the White-eared

Kob has fairly regular migrations and they migrated in a cyclic pattern on the plains below the Boma and Badingilu National Parks. We also found out that the Tiang migrate between the River Nile and the vast plains in the Jonglei area. The migration patterns of the Mongalla gazelles are still a mystery, but they seem to occur in areas between the Kob and Tiang migrations.

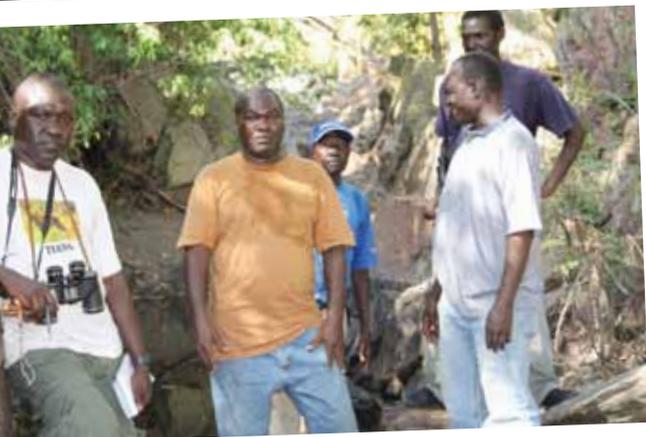
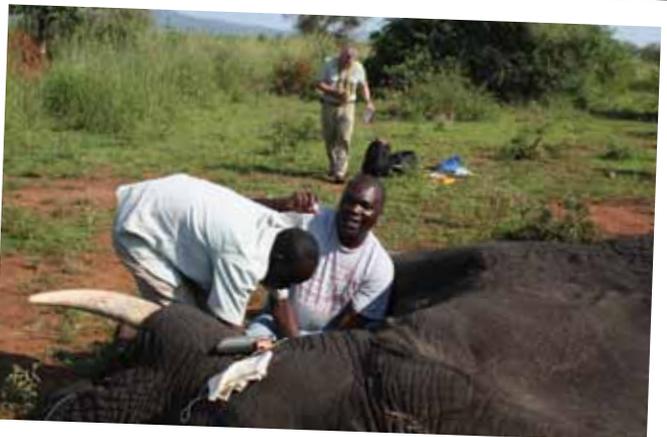
Why is it important to know these migration routes?

Knowing the migration routes helps us with knowing which geographic areas need protection from poachers and encroachers. It also enables the Government of South Sudan and wildlife conservationists to help develop eco-tourism activities in and around these habitats. This will bring in needed foreign revenue.

How is the government of south sudan planning to protect these rare and endangered species from the growing illegal bushmeat and ivory trade while protecting their migration routes from development activities such as oil exploration and mining?

The Government has established the Ministry for Wildlife and Tourism, which is under the leadership of Gabriel Changson. This body existed even during the civil war among the various secretariats established by the SPML/ SPLA to run affairs in the liberated areas. One area that the GOSS is working on is the extensive training and re-training programmes of wildlife conservation officers and rangers to fight poaching. South Sudan's wildlife policy addresses issues of land use planning and the cross-sectoral nature of land development issues. The Ministry is already engaging other government authorities on issues of land use planning to safeguard areas of wildlife, wildlife migrations routes and corridors with regard to the post-conflict development projects including oil and minerals explorations. It is important to protect these corridors otherwise the migrations will disappear.

CONSERVATION



Tell me more about the new sudan wildlife society?

The New Sudan Wildlife Society (NSWS) was founded in 1999 by twelve individuals who were/are concerned about the situation of wildlife under war conditions in South Sudan. I have taken the initiative in bringing together this group. During the years of 2000-2004 the NSWS conducted ground surveys on key wildlife areas, talked to people and commanders, organised workshops and community meetings. We also had discussions with regional and international donor organizations about conserving South Sudan wildlife for future of our country and the coming generation. Our work was supported by USAID/USDA/ Catholic Relief Services, and others.

The work of NSWS also inspired the SPLA/SPLM to establish a Natural Resource Technical Committee, which was funded by USAID. This committee comprised working groups in seven fields of natural resources such as forestry, livestock agriculture, geology, wildlife, etc. Their main activities were data collection and producing reports that would aid in planning for post-conflict rehabilitation and construction projects. NSWS also inspired USAID/USDA to set up, among other things, the Boma Wildlife Training Centre of which I was the founding member.

What research would you like to carry out in the future?

I would like to investigate further what environmental factors, other than pasture and water availability, influence the migratory species preferences in spending several months in their current wet season ranges, given the fact that these areas are within the oil concessions map. We are also planning surveys to count elephants and the migratory species to validate estimates from sample counts conducted in the previous years. I would like also to study the effects of climate change on the wildlife migration corridors and indigenous people's livelihoods in order to identify its overall impacts on the survival of wildlife migrations of South Sudan.

What implications does the armed conflict in south sudan have for your work and wildlife conservation in the future?

Armed conflicts, if continued, would definitely hamper my future research plans and fieldwork. For starters, poaching would increase and our conservation programs would not be implemented. On top of that, wildlife-based tourism will be affected and this will harm the incomes of local people and the country as a whole. Funding institutions would definitely be reluctant to support our efforts. It's worth remembering that armed conflict causes displacement and forced movement of people, which could put a strain on conservation areas in South Sudan.●



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The Kijabe Forest strip

Can Kenya afford to lose another forest?

Robust Forest in Kijabe Mission area

PHOTO BY: MICHAEL ADKINS

THE AUTHOR



BRYAN ADKINS is a Conservation Landscape Manager with Wildlife Works, based in Rukinga, Tsavo where Wildlife Works is implementing the world's first VCS and CCB validated REDD Carbon project in the Kasigau Corridor. Bryan's family has lived in the Kijabe area of Kenya for four generations and he has worked in forestry and natural resource management throughout East Africa and Sudan. Bryan has a Master's degree from Dalhousie University in Canada and is also a member of the Kenya Professional Safari Guides Association. He can be contacted at: bryan@wildlifeworks.com

It is a sight that reminds one of the magnificence that Kenya has to offer. As one leaves the haze of Nairobi, and travels up the eastern side of the Kikuyu escarpment, the air thins and freshens. Approaching the edge of the Great Rift Valley, the land drops away, and the view never fails to amaze. The Kikuyu Escarpment Forest, like many other forests in Kenya, once stretched like a dark blanket across the eastern wall of the Rift Valley. Today, only a remnant of this forest remains intact.

The Kikuyu Escarpment Forest (0°56'S, 36°40'E; 37,619ha) was gazetted in 1943 as a Forest Reserve, and is the southernmost block of the Aberdare forest range, which includes the Aberdare and Kipipiri forests. For management purposes, the Kikuyu Escarpment Forest is divided into the

following blocks: Uplands, Kereita, Kinale, Kamae, Kieni, Raggia; the Kijabe Strip at the southwestern edge of the escarpment forest currently falls under Kinale and Uplands Forest stations.

Many readers may be familiar with what was once a robust dry montane forest that dominated the escarpment as one descended from Mutarakwa to Maai Mahiu en route to Naivasha or Narok. This is the Kijabe Strip forest, which was once contiguous with the other Kikuyu Escarpment forest blocks. However, through increasing human pressure and extraction of forest resources, the Kijabe Forest Strip has been reduced to a fragment, isolated on the escarpment.

Ecosystem services refer to goods and services that humans receive from the environment. They include things such as rainfall, water catchment and cycling, soil nutrient cycling and soil



stabilisation, pollination and carbon cycling. In the Kijabe Forest Strip, many communities rely on the forest directly for many of these services. Alterations to these services could have severe ramifications and anecdotal evidence suggests that these services are indeed threatened in the Kijabe area because of massive forest loss. A case in point is the Kijabe Mission Hospital, an internationally recognised, Tier 1 health facility, where an estimated 600,000 people receive care annually. However, access to water is being limited by reduced and unpredictable rainfall resulting in reductions in the outflows of springs and boreholes on which the hospital has depended for the last century. Furthermore, an estimated 200,000 people in Maai Mahiu, Kijabe Mission, Matathia, Old Kijabe Town and Ewaso Kedong, depend on water that has traditionally emanated from at least seven permanent rivers on the escarpment including the Gitiligini, Engare Nairowa, Tongi Tongi and the Matathia rivers. In the last decade most of these have become erratic and seasonal, with only the Tongi Tongi and Gitiligini flowing throughout the year.

The potential risk of landslides is also increasing as volcanic soils known as *andosols* are left bare due to excessive forest clearance. Landslides could threaten both access to the hospital and railway line through the forest as was illustrated in 1998 when El Nino rains triggered a landslide that blocked the main road in to the hospital for several days. Similarly, heavy rains in April and May 2012 set off multiple landslides that blocked the road to Old Kijabe

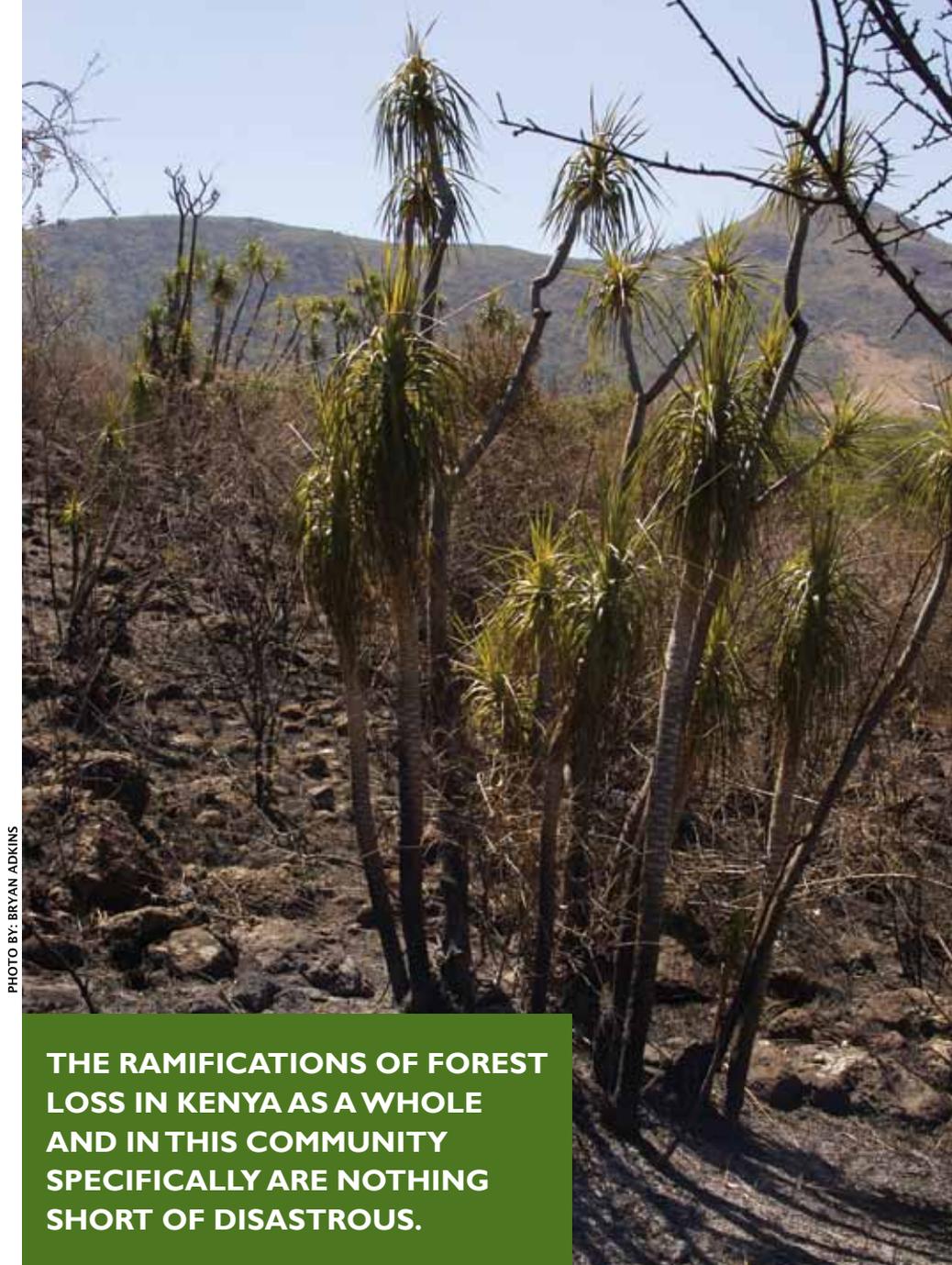


PHOTO BY: BRYAN ADKINS

THE RAMIFICATIONS OF FOREST LOSS IN KENYA AS A WHOLE AND IN THIS COMMUNITY SPECIFICALLY ARE NOTHING SHORT OF DISASTROUS.

Burned area after charcoal kilns were left unattended.

Town in various places, whilst boulders blocked parts of the railway line.

Experts estimate that the current forest currently covers 15% of its former area, and the clearance has mainly occurred within the boundaries of the gazetted forest reserve. Although the decline in the forest area has been well recorded over the last three decades, the onslaught has been heightened in the last five years. This increase in pressure has been driven by several factors including, but not limited to, geographic location and lack of resources for sustainable management. The ramifications of forest loss in Kenya as a whole and in this community specifically are nothing short of disastrous.

The geographic location of the Kijabe Forest Strip poses an immense challenge to its management. Intense pressure from hardwood harvesters in Nairobi and other urban areas is difficult to control because of the proximity of major roads and the railway line. Policing the extraction of timber and firewood is complicated by the fact that the forest is still administered by the fairly distant Kinale and Uplands Forest Stations, now isolated from the forest.

While the Aberdare Fence Project has been hailed as one of the greatest forest conservation initiatives in the world, ironically, it may have heightened the rate of destruction of the Kijabe Forest Strip. As the other sources of timber and



PHOTOS BY: CRAIG SORLEY

THE FOREST ACT (2005) AFFORDS A SIGNIFICANT OPPORTUNITY FOR KFS TO RELIEVE THE STRAIN ON THEIR RESOURCES THROUGH WORKING WITH LOCAL COMMUNITIES TO PROTECT AND MANAGE FORESTS.

fuel wood became less accessible with the fence, the pressure shifted to the Kijabe Strip, which still has easy access and a near-complete lack of policing. Thus, albeit the exclusion of the Kijabe Strip from the Aberdare Fence Project was logical due to its geographic location (would have required crossing over to the western side of the A104 highway), this shifting of pressure has intensified its destruction.

Specifically, there is anecdotal evidence that the East African Pencil Cedar (*Juniperus procera*), often used for fence posts, is increasingly extracted for fencing the large number of newly sub-divided ranches in places such as Konza. Additionally, ancient olives (*Olea africana*), some estimated to be hundreds of years old, are targeted

TOP: EA Pencil cedar (*Juniperus procera*) downed for timber and fence posts. Note the use of chainsaws.

INSERT: Cedar extraction for posts and timber targets even immature trees.

to feed dozens of active charcoal kilns within the forest. The daily extraction of “deadwood” leaving the forest everyday to satisfy commercial firewood operations in Nairobi and Limuru exacerbates the situation.

The most pervasive challenge to the continued existence of the Kijabe Forest Strip is the enduring lack of resources for proper forest management in Kenya. First, besides both stations tasked with managing the Kijabe Forest (Kinale and Uplands) being disconnected from it, these forest stations also face the same resource constraints that many other Kenya Forest Service (KFS) stations experience across the country. Crucially, only two forest guards currently police the Kijabe Forest Strip, which is roughly 8000 hectares. The terrain is steep and varied and is difficult to patrol under the best of circumstances. With neither a vehicle nor adequate human resources, the management of the forest cannot be effective.

The Forest Act (2005) affords a significant opportunity for

KFS to relieve the strain on their resources through working with local communities to protect and manage forests. Local community groups and end users can form Community Forest Associations (CFAs) that, in conjunction with the KFS, can develop management plans for local forests. This allows local communities to effectively take charge of their own forests with Government oversight. This has been pioneered in several areas of Kenya with some success, such as in Ngare Ndare and Kinale. The development of a distinct Community Forest Management Plan for the Kijabe Forest Strip is crucial to managing the forest effectively and has the potential to be the most important single step towards its long-term conservation.

Under such a management plan, another opportunity exists in the form of coordinating the small initiatives that have already been started by various communities. This can create potential revenues from alternative and sustainable forest uses. Much



PHOTO BY: BRYAN ADKINS

Olea africana, felled by fire in 2008.

of the financial strain of managing the forest comes from the realization that the Kijabe Forest Strip does not earn any revenue for KFS short of deadwood collection permits. Several of the communities surrounding the Kijabe Forest Strip have begun initiatives such as replanting and beekeeping. Further investment in the development of eco-tourism facilities, carbon finance or other potential revenue streams is certainly needed. For instance, its proximity to Nairobi presents an excellent opportunity for eco-tourism with hiking, biking and climbing attractions, as well as great birding. Currently, Osotua Camp (www.kenvokenya.com) run by local environmental groups (Kijabe Environment Volunteers and Ilparakwo Environmental Group) offers excellent

and very affordable accommodation for individuals or groups.

The Kijabe Forest Strip provides a tremendous wealth of ecosystem services to the communities surrounding it. Once contiguous with the other Kikuyu Escarpment forests, the Kijabe Forest Strip now presents an immense management challenge. With the state of forest loss in Kenya and the push towards 10% indigenous forest cover nationally,

as outlined in the government's Vision 2030, Kenya cannot afford to lose these types of forest. The costs transcend environmental ones, directly threatening human health and the economy as well.

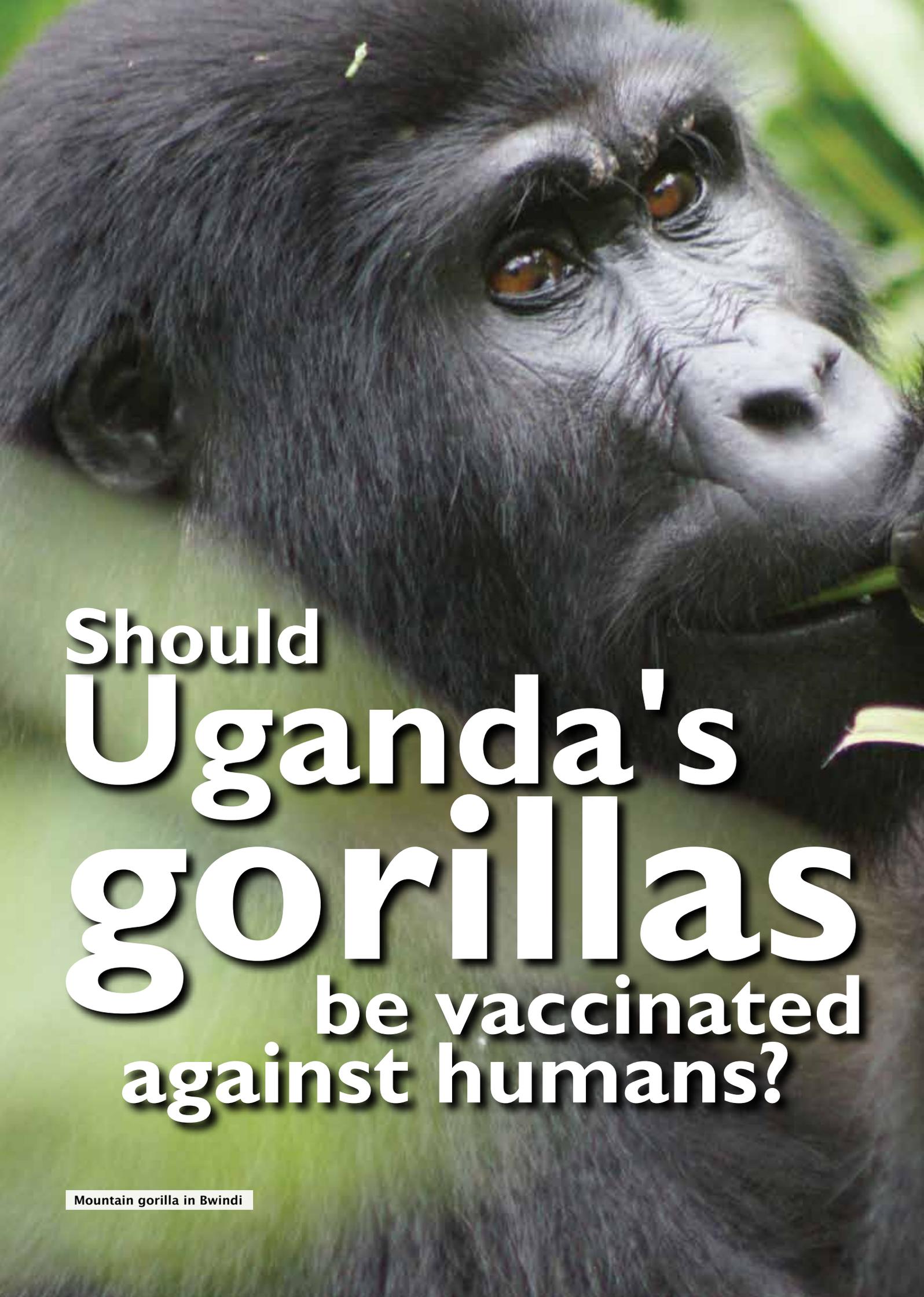
Yet, despite these threats, there also exist immense opportunities to effectively conserve this key forest at the doorstep of the nation's capital. In May 2012, KFS committed itself to having a more permanent presence in Kijabe through a sub-station, in addition to revoking all dead wood collection permits in the area. This is an excellent first step and commendable. It needs to be supported with resources and goodwill from the communities around the forest as has been seen in pilot initiatives such as Osotua Camp. The potential to develop a Community Forest Management Plan with KFS may present the best and most logical solution to the current threats to this beautiful area. ●



PHOTO BY: BRYAN ADKINS

Area near Citiligini, burned in 2008 after charcoal kilns were left unattended.

A special thanks to Dr. Mwangi Githiru and Mr. Craig Sorley for their kind assistance and patient review of this article.



Should
**Uganda's
gorillas**
be vaccinated
against humans?

Mountain gorilla in Bwindi

THE AUTHOR



DAVID HEWITT is a London-based freelance writer specializing in conservation and environmental issues. He is also a part-time PhD student at the University of Leeds in England.

To vaccinate or not to vaccinate, that is the question: whether it is better to proactively guard Uganda's mountain gorillas against the very real threat of human diseases or to stand back and intervene only as a last resort so as to leave the great apes as wild as possible.

Of course, the question of vaccinating gorillas has been the source of much debate among scientists and frontline conservationists for some time. However, with the eco-tourism industries of Rwanda, Uganda and even Dr. Congo bringing more people than ever quite literally face-to-face with the great apes, it has taken on a new level of significance.

According to a recent study published in the journal *PLoS One* (an interactive open-access journal for the communication of all peer-reviewed scientific and medical research), over the last two decades alone, the Zaire strain of the Ebola virus has killed around one-third of the global gorilla population. Furthermore, the team behind the research found that a single gorilla population could need as long as 130 years to recover from just one Ebola epidemic. Given that the slow breeding nature of gorillas

makes population resilience incredibly important, infectious disease is now just as serious a threat to the survival of Africa's gorillas as poaching and habitat loss and needs to be treated as such, the study concluded.

For co-author Dr. Peter Walsh of the University of Cambridge in England, these figures alone make the question of vaccinating great apes against human diseases a no-brainer. For this quantitative ecologist at least, it's time for the conservation community to accept the seriousness of the situation and adopt a 'gloves off' approach to saving gorillas. "Everything we know of these diseases shows that they come from humans," he explains. "So, we're responsible for this problem and yet we're doing nothing to address it!" Moreover, not only is the mass vaccination of both lowland and mountain gorillas highly desirable, if not vital, but it is also entirely feasible. "The expertise and technology is already there and has been proven to be effective," he adds. "Plus, vaccinations require no ongoing commitment - you just go in, vaccinate and leave, and in one fell swoop, you cut the problem in half - and the 'usual suspects' of conservation funding sources would be only too happy to pay for such a proven strategy. So, it's not rocket science. The only thing that's stopping is from getting on and vaccinating is attitudes!"

And herein lies the heart of the debate. Notably, these 'attitudes' are hardly insignificant, but rather stem from the legitimate concerns many within the conservation community have about mass, proactive vaccinations. At their most basic, the attitudes referred to here tend to come from a gut feeling that vaccinations are 'not natural'. That is, humans should not interfere with natural phenomena such as disease outbreaks in great apes. For Dr. Walsh, such an argument is as puzzling as it is naïve. "Primates are unique when it comes to the 'oh, but it isn't natural argument,'" he counters, citing numerous examples of conservationists taking quite the opposite view when protecting 'less iconic' species. "Let's be honest,

humans already interfere in the lives of gorillas," he adds. "From destroying their natural habitat to laying snares in the forests, we're intervening in a negative way and have been doing so for years. So, what's the big deal about intervening in a more positive way?"

In many ways, Dr. Gladys Kalema-Zikusoka is in agreement with Dr. Walsh. The head of the NGO Conservation through Public Health (CTPH) and a newly-appointed member of the board of the Ugandan Wildlife Authority (UWA), the veterinarian doesn't dispute that the technology already exists to carry out mass vaccinations among great ape populations, including the gorillas that have been the focus of her career to date. Neither is she in any doubt that such a programme would be difficult to carry out on cost grounds. "The common conservation community could easily fund it, and for Ebola, there's a very strong case for the global public health community providing the funding," she explains.

However, though it's feasible, for Dr. Kalema-Zikusoka, mass vaccinations are not desirable, unless, she adds "you have an Ebola outbreak and you think animals are at serious risk of dying". For starters, there's question of quite how effective such a programme would be. Going by her experience of working with gorillas in the wild, she is yet to be convinced of this. "For habituated mountain gorillas, then, yes, it's easy to do. Vets can reach them easily and even recognise individuals, so you know who has been vaccinated and who has not," she explains. "But, for lowland gorillas and for unhabituated mountain gorillas that retreat into the forest whenever humans approach, it's much more difficult. In theory, you could use bait. But then, of course, some gorillas may not eat the bait while others may



PHOTO BY: GORILLA ORGANISATION

Dr. Gladys Kalema-Zikusoka has first-hand experience of treating Uganda's wild mountain gorillas.

IF CONSERVATIONISTS ARE TO BE MORE PROACTIVE IN THEIR EFFORTS TO SAFEGUARD WILD GORILLAS, THE ANTI-VACCINATIONS CAMP ARGUE, THE FOCUS SHOULD INSTEAD BE PLACED ON REDUCING THE RISK OF THE APES CONTRACTING HUMAN DISEASES IN THE FIRST PLACE.

have several doses. And then there's the issue of other animals eating the bait and being harmed, perhaps fatally."

But above all, for Dr. Kalema-Zikusoka and many other conservationists, it's simply a matter of mass vaccinations being a 'step too far'. That is, proactively intervening in this way would make gorillas even less 'wild', turning the Virunga mountains into little more than a 'wild zoo', with potentially devastating consequences. "Gorillas are already losing their sense of wildness," she explains, pointing to the growing numbers of groups being habituated, largely for the benefit

of tourists. "This really needs to be minimised as much as possible. Gorillas with too much reliance on humans can lose their fear of poachers and they're more likely to roam into human habitations, where not everyone will welcome them. They're also at greater risk of poaching and diseases that they might not be vaccinated against."

Similarly, Dr. Fabian Leendertz, of the Robert Koch Institute in Berlin, is also wary of getting too involved. "Certainly, there is a lot of evidence showing that human viruses are being transmitted to the great apes, in zoos, in sanctuaries and in the wild," he

says. As with Dr. Kalema-Zikusoka, he acknowledges that there could be cases where proactive vaccinations are the best course of action to take. "If we find a good way to vaccinate against Ebola then, having seen the devastating effect it has had on lowland gorilla populations in the past, I would definitely be in favour of vaccinating, though how feasible it would be to vaccinate unhabituated gorillas is another question. However, I am not in favour of vaccinating against human diseases just for the sake of it and, besides, it's not like there are vaccines available for everything. Yes, there is one for measles, but then that's mainly a childhood disease and young children aren't permitted to visit gorillas in the wild anyway. Also, HMPV (Human metapneumovirus - an acute respiratory virus) is the virus that has caused gorillas and chimpanzees the most damage recently, and there isn't a vaccine against this yet," he argues.

If conservationists are to be more proactive in their efforts to safeguard wild gorillas, the anti-vaccinations camp argue, the focus should instead be placed on reducing the risk of the apes contracting human diseases in the first place.

For Dr. Walsh, however, such an argument is yet further evidence of what he calls the naivety of many within the great ape conservation movement. "Sure, there are rules tourists are required to follow when the visit gorillas, but they just don't get strictly enforced. For starters, it's hot and people don't want to wear masks. Plus, there's a massive economic incentive for trackers and guides to turn a blind eye and let tourists bend the rules."

For him, concentrating on getting tourists to follow rules, however strict, and hoping for the best, rather than simply accepting disease transmission as an inevitable consequence of tourism and so doing something about it would be a grave mistake. He concludes: "African ape conservation as a whole is a disaster right now. If people don't rouse from this romantic, anti-interventionist stance, if we don't bite the bullet and realise that we have to become more involved, unless we start saying 'let's see what works and then get it done', then I don't hold out much hope for gorillas." ●



LUXURY HOMES IN OI PEJETA

CONSPICUOUS WEALTH OR CONSERVATION?

OL PEJETA CEO RICHARD VIGNE INTERVIEWED BY SWARA

The Mount Kenya Wildlife Estate (MKWE) has raised a lot of eyebrows because construction and conservation don't often appear in the same sentence. How does this luxury development fit into OI Pejeta's conservation philosophy?

Financing our conservation activities into the long term future is the major reason that we are undertaking this development. The estate will only occupy 1000 acres in an area adjoining the Conservancy, will be invisible from the Conservancy itself and should not interfere – at all – with key wildlife habitat or the wilderness experience. If MKWE is successful it will provide OI Pejeta with a reserve fund and an annual revenue stream that we will use to finance conservation and community development.

A lot of your critics will say you are merely disposing of some not very useful (for wildlife) land to cash in on Kenya's property boom and put some money in the bank. Your response?

I would say we are sacrificing 1000 acres of land to properly secure the OI Pejeta Conservancy, and to provide meaningful long term funding for conservation and community development beyond our boundaries. Thus when the fickle tourism business temporarily disappears we will still have the revenues we require to secure our wildlife populations and achieve our mission.

Won't you be contributing to the current surge of land prices in and around Nanyuki, making home ownership impossible for the poorest prospective buyers who are basically Kenyans?

No, that represents a poor understanding of the dynamics of demand and supply. In fact this development will act to increase supply and thus could stabilize the current surge in land prices. It is interesting to note that almost all of the houses have so far been sold to Kenyans...

What material benefits will this development bring to Conservation? Can you quantify it? How many more elephants, for instance, will be safe because of this? How many rhinos? Currently 70% of our annual revenues derive from tourism. However – as we all know – tourism is a very fickle business that can disappear overnight for reasons that are often beyond management's control. This is problematic when most of the costs of conservation – for example security – are basically fixed. As such this development will provide us with a risk

management tool that diversifies revenue streams and provides alternatives in times of tourism downturn. It will also assist to increase overall revenues into the Conservancy, so improving profitability. Therefore, by virtue of our constitution that demands that all surpluses are invested back into conservation and community development, we will be in a position to provide more resources to wildlife areas and communities beyond our boundaries.

OI Pejeta is widely seen as an organization that champions home-grown tourism and Kenyan visitors but MKWE will most likely benefit mostly rich foreigners. How do you reconcile the two?

Not true – 95% of house sales so far have been to Kenyans. And by the way, close to 50% of visitors to OI Pejeta are now Kenyans

I've heard the estate called a "Luxury Zoo." How do you feel about such a description?

I have never heard of a "luxury zoo" although it sounds like an interesting idea! The 1000 acres upon which the development will be situated will be predator free and used for the management of endangered species, particularly Grevy's zebra. Thus we will work with the KWS to form breeding herds to produce surplus animals for reintroduction to areas where they have become extinct

Do you think this concept is a trailblazer for other conservation areas such as Tsavo, Amboseli and the Mara? Will other organizations follow suit?

Conservation needs financing. This is just one method to develop the funding required to pay for the costs of conservation. In essence it is not much different from the construction of a hotel. So yes, I see it as a concept that could easily be replicated on the periphery of National Parks and other protected areas. It is common in places such as South Africa.

When is it most likely to be completed, and how many extra people will it mean being resident in the OI Pejeta area?

It should be completed within the next 24 months or so; we anticipate that many of the homes will be used as weekend getaways rather than permanent residences, so it is difficult to know how many more people will become resident within the area.



PHOTO BY: HEINER STICKANN

KRUGER SAFARI DELUXE

An authentic passenger statement

THE AUTHOR



FELIX PATTON is a rhino ecologist, who writes and broadcasts about the species from Africa and Europe. He is a frequent contributor to SWARA.

For the intrepid adventurer, cruising along a flat tarmac'd main road in a stately SUV may not seem an ideal way to undertake a wildlife safari. In South Africa's massive Kruger National Park (KNP), it is. At around 350kms in length and 60kms on average wide, this Park is just short of 20,000 square kilometres in size – bigger than near neighbour country Swaziland and even

Israel. Put another way, you could put over a hundred Nakuru National Parks into the same area.

Given the size of the Park, several days (in this case six) are needed to get a good idea of its sixteen varying 'ecozones' and the abundant wildlife. Each ecozone has its own combination of geology, land-shape and rainfall giving rise to different patterns of vegetation and mix of animals.

Kruger, as with many other large South African wildlife parks, has an excellent road system made up of a tarmac "backbone" and well graded gravel side roads. A normal sedan car can negotiate these roads but the larger wheeled SUV allows for a higher seat position which is better for seeing the wildlife. Amazingly, many of the animals can be found in the bush on each side of the tarmac road – and sometimes even on it!

Access to the Park is through one of eight gates. The furthest north is Pafuri Gate but some 50 km to the south and west is the more widely used Punda Maria Gate where there is also a rest camp site nearby. The twelve rest camps spread throughout KNP offer similar facilities – usually luxury safari

tents or bungalow accommodation, a swimming pool, laundromat and a shop (gifts, food and drink) and at six of the camps there is also a petrol station. Visitors can self-cater or use the restaurant facilities. There is, however, little privacy as the Park caters for over a million visitors a year and the campsites are often full to capacity.

Given the vastness and diversity of the KNP, it is not surprising that there is a wide variety of wildlife that can be seen including the "big five" – rhino, elephant, buffalo, lion and leopard – and the more easily found giraffe, waterbuck, zebra, kudu, nyala and ever present impala.

The northern area, to the north of the Olifants River, is characterised by Mopane tree shrubveld and savannah which is frequented by a significant number of the over 13,000 elephants that can be found throughout the whole Park. The Luvuvhu Valley is rich in bird life where the crested guinea-fowl and Pel's fishing owl are particular attractions and around the Punda Maria campsite, the rare Sharpe's greysbok may be seen and there is the possibility of a wild dog pack.

Forty kilometres south of Punda Maria and overlooking the Sirheni Dam on a corner of the Mphongolo river, is the Sirheni Bush Camp. Bush camps offer the benefit of being in more isolated locations and accommodate only a small number of people. However they are more expensive and not always, as was this case, value for the extra money.

There were several good sightings of elephants made on the 100 km mix of main and side roads from Sirheni to Mopani Rest Camp via the Shingwedzi Rest Camp with a special group playing in the Grootvlei Dam. The Mopani Rest Camp overlooks the Pioneer Dam and a short drive up the S49 in the late afternoon resulted in a series of exceptional sightings starting with elephants at the Mooiplaas Dam and then a cheetah walking along the road right up to the car and, some 100 metres further on, a group of three sub-adult lions just alongside the road. The camp itself is one of the largest with the high point being its excellent swimming pool.

Between the northern area Mopani camp and the central area Olifants camp is a road running east from the main H1-6 road through the Lebombo Mountains to the border with Mozambique at the Giryondo Border Post. The road goes straight into the Limpopo National Park. Kruger now forms part of the Great Limpopo



PHOTOS BY: FELIX PATTON

February was not the best time to visit Kruger as much of the wildlife was difficult to see.



Elephants are easily found especially at the many dams.

Transfrontier Park - a peace park that links KNP and game parks in Zimbabwe and Mozambique, with fences removed to allow animals to freely roam in much the same way as they would have in earlier times. When completed, the Greater Limpopo Transfrontier Park will extend across 35,000 square km, 58% of it South African, 24% Mozambican and 18% Zimbabwean territory.

To the south of the Olifants River, the habitat is characterised by thornveld and this is where most of the wildlife is found. The focal point is the largest rest camp in KNP, Skukuza Camp and the equally popular Lower Sabie rest camp while at the bottom south-west corner is the excellent Berg-en-Dal camp.

Given the pre-eminent rhino population of KNP, it is perhaps a little surprising at how little general information is available about it at the rest camps – apart from Berg-en-Dal, that is, which houses an excellent demonstration area including full size model of a Black rhino. It also presents a most interesting model of the skeleton

SPOTLIGHT

of a rhino and a diagram of its internal organs showing that, while a vegetarian species, it is not a ruminant. Berg-en-Dal has been christened “rhino camp” as its surrounding area is often the best place to find white and even black rhino.

The private road leading to the Biyamiti bush camp some 50 km east of Berg-en-Dal camp was flagged as one of the places to see rhino and so it was. A group of three White rhinos – a male and a female with calf – grazed their way along the roadside both in the late evening and who were entirely unfazed by the close presence of the vehicle. The group was still in the vicinity early the following morning on the drive out of the Park through the Malelane Gate and the end of an interesting if a little disappointing safari.

Between January 16th and 18th, the effect of the tropical depression Dando was felt in the Park with up to 500mm of rain being reported in some areas. Most of the main rivers flooded. At one point the Park was closed, some visitors were trapped in cars while others had to be rescued by helicopter. These were the worst rains and flooding since 2000. Although within a few days the rivers and flood waters had subsided and many roads were drying out, the floods had washed away some roads, had



PHOTOS BY: FELIX PATTON

White rhino mother and calf near to the Biyamiti Bush Camp. Over 11,000 white and 700 black rhinos live in the Park.

damaged bridges and causeways and left debris blocking others. Some campsites and picnic spots were damaged and had to be closed.

But for a chance remark during an email exchange with a native South African, the problems being experienced in the Park would have gone unnoticed as there had been no communication from the unit of SanParks through which all campsite bookings had to be made. On making contact with the unit a few days before departure, it was

clear that some accommodation was no longer available and alternatives had to be hurriedly arranged.

That SanParks left it to the visitor to find out there were problems with their bookings was both surprising and disappointing as one expected them to be highly efficient. And this disappointment was compounded by the poor information on road and bridge closures that were encountered when in the Park. Many gravel roads declared open were not reliable because they would lead nowhere as most of the low water bridges and causeways were inaccessible and it was necessary to back track.

Even in normal years, the summer months are known to be the poorest time to safari in Kruger as the vegetation is at its fullest. After the drenching, the warm sun led to greater than ever growth with 2 metre high grasses lining the roads behind which was dense leafy bush. Wildlife sightings were all but impossible and the safari overall hugely disappointing. So many visitors write glowingly of their experiences in Kruger so it would be unfair to put people off going there. Timing of this visit could not be changed so perhaps the experience will serve to highlight the need to visit at a better time of year. Suffice to say that a return visit is already being planned for September 2013 when it is hoped Kruger National Park will reveal its true wildlife experience. ●



One of the causeways damaged by flooding.

Poaching crisis in Kruger

In 1891, the government of the time acted to protect certain species, including the rhino, from being hunted with the white rhino all but extinct in South Africa. There was less than 50 remaining and mostly in the iUmfolozi Game Reserve in Natal. The last White rhino of the now Kruger National Park (KNP) was recorded in 1910 in the Pafuri area whilst the last Black rhino died in 1936.

As the populations of both White and Black rhinos increased in other parts of South Africa, it was decided to re-introduce them to KNP. Between 1961 and 1974 some 345 White rhinos were brought into the Park and between 1970 and 1990, some 90 Black rhinos were introduced into the southern area around Skukuza and Tshokwane. It is from these humble beginnings that, at the start of 2012, KNP could proudly boast over 11,000 White and 700 Black rhinos. The successful breeding of rhinos has resulted in it being Africa's chief killing ground for poachers. Between the years 2000 and 2011, there have been 1106 rhinos recorded as poached in South Africa of which 566 (51%) were in KNP. By virtue of its higher number and widespread distribution, the White rhino has borne

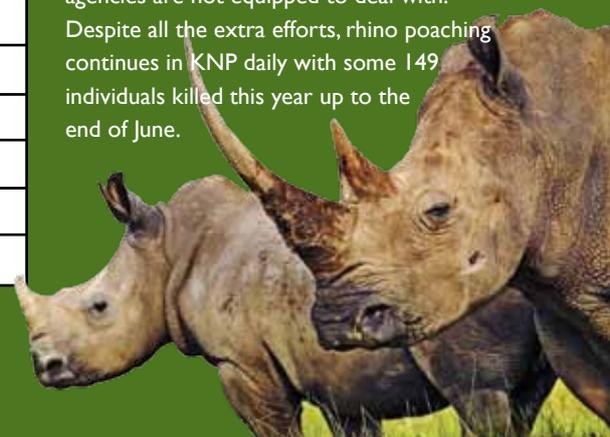
the brunt of the poaching with 244 of the 252 rhinos poached in KNP in 2011 being White.

Responsibility for much of the rhino killing in the Park has been placed on poachers coming across the border from Mozambique. Back in 1976, the eastern boundary of the Kruger NP with Mozambique was fenced. When the Great Limpopo Transfrontier Park was officially declared in 2002, some 20 metres of the fence separating the Kruger National Park (KNP) from the Limpopo National Park (LNP) in Mozambique was ceremoniously cut down. Thereafter more of the 150km was cut down or let to go into disrepair. To try to reduce the impact of the recent incursions by poachers from Mozambique, the South African government requested assistance from the army. In early 2011, 165 troops of the South Africa National Defence Force (SANDF) were stationed in KNP to patrol the border area. This is not an easy task. The border is demarcated by the Lebombo Hills which run the full 350kms and whose tree and bush habitat provides good hiding for the incoming poachers.

To make it more difficult for the poachers to enter KNP from Mozambique, the idea of re-erecting the dividing fence was mooted. However, this would have cost between R200 million and R400 million, plus a maintenance costs of R100 million a year and without any guarantee that it would have been an effective deterrent. The alternative has been to agree to create a buffer zone by including several private Mozambique concessions that form the 220,000 hectare Greater Lebombo Conservancy to become part of a Trans Frontier Conservation Area which is fenced on its eastern side. Good management practice will make the impending poachers task of reaching, particularly south, KNP without being caught that much more difficult. It is in the southern area of the KNP where most of the rhino poaching has occurred.

In February 2012, it was announced that a further 600 troops were to be deployed along its borders to help fight gangs smuggling rhino horns. Four military companies were to be sent to the borders with Zimbabwe, Swaziland and Lesotho. The deployment includes army engineers who are conducting repairs and maintenance on the Zimbabwe-Mozambique border fence. Mozambique and Zimbabwe border KNP directly while Swaziland is just a short distance south. Effective border management is part of the government crime prevention strategy to deal with cross-border crime syndicates and curb poaching.

Whilst the use of the military in what is a domestic situation is a drastic step, many of the modern day poachers are often using combat-style methods and equipment, including night-vision telescopic rifles and even helicopters to do their killing which the normal anti-poaching units set up by the police, the parks authorities and private agencies are not equipped to deal with. Despite all the extra efforts, rhino poaching continues in KNP daily with some 149 individuals killed this year up to the end of June.



RHINO POACHING IN SOUTH AFRICA

Year	Kruger NP	All SA	% Kruger
2000	0	7	0
2001	4	6	67
2002	20	25	80
2003	14	22	64
2004	7	10	70
2005	10	13	77
2006	17	24	71
2007	10	13	77
2008	36	83	43
2009	50	122	41
2010	146	333	44
2011	252	448	56
2012 – to June	149	251	59

LAKE BARINGO

Another casualty of the furadan scourge

We always want to know more. This trait is inherently human; we learn throughout our lives. Knowledge breeds curiosity, and curiosity takes us to wonderful places. With this in mind, I headed to Lake Baringo...

THE AUTHOR



PHOTO BY: MUNIR VIRANI

SHIV KAPILA was born and raised in Kenya before pursuing studies in the United Kingdom. He received a Masters degree in Conservation from University College London and has been working on African Fish Eagles at Lake Naivasha and Baringo with support from The Peregrine Fund and the National Museums of Kenya.

After working on the African Fish Eagle, *Haliaeetus vocifer*, at Lake Naivasha for close to two years, my affinity for these birds has almost developed into an obsession. They are a reliable and rewarding raptor to study, and supremely dignified and graceful. I was keen to expand my research on Fish

Eagles to other areas, and with good cause. Although considered a relatively common bird throughout most of its range, as birds of prey go, the African Fish Eagle is an ideal candidate to use as an umbrella species, an indicator species of environmental change. As a slow-to-mature bird and an apex predator with low rates of reproduction, this raptor can accurately offer early warning signals of environmental stress. Their population and breeding structures and observed fluctuations can also, and often do, reflect changes in conditions within their ecosystems. By studying these fluctuations, they enable scientists to assess the health of the ecosystem, and, by protecting them, we invariably conserve their entire habitat. The birds are most commonly found around freshwater lakes and rivers, and in Kenya this means Lakes Naivasha and Baringo.

Lake Baringo is radically different from Lake Naivasha; at only 160 km north of Naivasha, its altitude is over 1,000 metres lower. This has a dramatic effect on the temperature and vegetation. It's warm enough to support crocodiles and dry enough to attract specialist bird species which one would only expect to encounter in

PHOTO BY: MASUMI GUDKA





Adult from Parmalok island fishing.



Female Fish Eagle catching its lunch.

BEING OF SIMILAR SIZE TO LAKE NAIVASHA, ONE WOULD EXPECT THERE TO BE COMPARABLY SIMILAR POPULATIONS OF FISH EAGLES, EXHIBITING THE SAME BEHAVIOURAL AND BREEDING PATTERNS. UNFORTUNATELY, NUMBERS AT BARINGO HAVE ALWAYS BEEN LOW.

northern Kenya's arid scrublands - such characteristics mean the birds on the local checklist approach 500 species. The differences do not end there - the shorelines are seemingly perfect for Fish Eagles: high cliffs directly overlooking the lake means the fishing should be easy, marshland abounds, providing cover and ample training grounds for juveniles, and maze-like island groups in the north seem to double the available territory space.

Being of similar size to Lake Naivasha, one would expect there to be

comparably similar populations of Fish Eagles, exhibiting the same behavioural and breeding patterns. Unfortunately, numbers at Baringo have always been low. Fish Eagle counts were first conducted here in the late 1960s and early 1970s by the late Dr Leslie Brown, Kenya's "Father of Raptor Biology", whose highest recorded number was 70 individuals including both adults and juveniles. The highest population at Naivasha was 224, recorded at the same time as the 70 birds at Baringo. In those days, Baringo and its environs

were almost pristine - development had hardly penetrated this far north and the lake's conditions were assumed to exhibit a natural state, or as close to it as possible. A probable cause of these low densities may be the lake's location, climate and geography; Baringo is an oasis surrounded by desert, and its isolation may result in repelling wandering Fish Eagles, reluctant to even explore a habitat that may seem barren (a lone female on one of the lake's smaller islands who lost her mate in 2006 has not found another after four years; at Naivasha she may have done so in less than a week). The resultant low turnover rates ensure that populations could be stable, but could rarely increase. Research continued in the late 1990s and early 2000s by Dr. Munir Virani (of The Peregrine Fund and the National Museums of Kenya) and by this time numbers had dropped to a low of 36 individuals, close to a 50% loss.



PHOTOS BY: MASUMI GUDKA

Adult turning in for a kill.

After a lull of five years, during which no counts were conducted, I made my first visit to Baringo in November 2010. This was primarily to assist Masumi Gudka, a Kenyan student studying towards a Masters degree in Conservation Biology at the University of Cape Town. Gudka was looking at the chemistry and toxicology of Lake Naivasha and how this is affected by large-scale horticulture. Intensive horticulture and agriculture is largely absent from the shores of Lake Baringo, so it was used as a control or neutral site to which we can compare Lake Naivasha. Gudka was assessing levels of certain chemicals in lake sediment, water, fish and Fish Eagles. She had enlisted Simon Thomsett, Kenya's leading authority on raptors, and myself to help trap the birds in order to draw some of their blood to test for particular toxins that they may be exposed to.

The numbers of Fish Eagles I counted was exceedingly low at only 20

individuals, including two juveniles and two transient (non-territorial) adults. This again, was close to a 50% loss from the previous count and represents a staggering rate of decline over those five years. The islands experienced the most marked reduction; the largest of these islands (Ol Kokwe) lost four out of its five pairs. This highlighted the gravest threat to this lake: poisoning. Despite bans on its distribution and sale, Furadan, a deadly carbamate is still sold, among others, in larger towns close to Baringo such as Marigat, and is indiscriminately used in the area. Originally intended to combat nematode worms in the farming industry, this chemical has been abused; it has been used as a retaliatory killer to destroy problem carnivores, most infamously

in the Maasai Mara Game Reserve with devastating effects. This lethal chemical is a major influence in causing a 60% decline in African vulture populations over the past two decades and severely depleting Kenya's lion numbers. It and other poisons are used at Lake Baringo for the same reason but with the desired effect of killing crocodiles. Crocodiles occasionally take goats and other livestock and the usual response is to kill them by laying out poison-laced fish on the shore in areas where they are known to frequent. This method is opportunistic and indiscriminate; often causing large-scale collateral damage: the most recent reported poisoning incident took place on Ol Kokwe in 2006 and not only killed eight crocodiles, but also thirteen Fish Eagles,



Adult Fish Eagle showing leucistic wing patches.

PHOTOS BY: MASUMI GUIDKA

two Goliath Herons and two Monitor Lizards. Among the dead were two goats, the very animals the perpetrators were trying to protect.

Normally top predator densities should recover, give enough time free from such disturbance, but other threats at Baringo hinder their increase: the area has been speedily and steadily overrun an invasive plant. Mexican Mesquite, *Prosopis juliflora*¹, was intentionally introduced to the Baringo area in the 1980s to increase resources of fuel-wood. It quickly became clear that no matter how high the demand for its fuel the plant would spread quickly,

and it now covers very large tracts of land near the lake. Native Acacia trees and grasses have been out-competed and are virtually absent from the area. The effect is detrimental to both the local human population who depend on the vegetation for their livestock and for the Fish Eagles that prefer to nest in the tall Acacia trees that used to surround the lake's shores. The situation has become so dire that the only active Fish Eagle nest we located was situated at the top of an invasive Kapok tree.

After four years, the lake's Fish Eagle numbers have declined precipitously to a low of 20 individuals, and this

may be having an ominous effect on their health. Of the nine Fish Eagles that we trapped and banded in the last year or so, eight showed physiological characteristics of a severely stressed population. The physical mutations we found in these Fish Eagles, such as hyperkeratinosis (abnormalities of the scales on their feet that are made from keratin, just like our fingernails) and leucism (patches of plumage lacking any pigmentation), can be caused by numerous deficiencies and toxins, but also points to some degree of inbreeding². This could be as a result of a combination of low populations

¹This shrub is listed as one of the 100 most virulent invasive species and has been deliberately introduced to large areas of northern Kenya.

Reference: World's Worst Invasive Alien Species: A selection from the Global Invasive Species Database. S. Lowe, M. Browne, S. Boudjelas, M. De Poorter. (2000) Published by The Invasive Species Specialist Group (ISSG), a specialist group of the Species Survival Commission (SSC) of the World Conservation Union (IUCN).

²Leucism is only naturally present at a rate of 0.1%-1% in wild bird populations. Incidences where it manifests in a higher proportion of a population is most likely to be due to some degree of inbreeding as it is an inherited condition.

Reference: A case of leucism in the burrowing owl *Athene cucularia* (Aves: Strigiformes) with confirmation of species identity using cytogenetic analysis D. M. Nogueira, M. A. S. Alves. *Zoologia (Curitiba, Impr.)* vol.28 no.1



MAIN PHOTO: Adult soaring over the lake.
INSERT: Releasing a newly tagged adult on the North side of the lake.

with a minimal turnover rate: very few wandering adults get to the lake and those that are resident breed at very slow rates, so the gene pool remains small. Accounting for these factors, the lake may cease to support any of these powerful and captivating raptors in as little as ten years. The Fish Eagles at Baringo have been calculated to collectively generate over USD 150,000 per annum for the area in terms of tourism revenue and expenditure. Thus the loss of even one of these birds to retaliatory poisoning significantly impacts the local community.

Lake Baringo was declared a Ramsar site, a wetland of international importance, in 2002 but so far it has not been treated as such. Solutions to these problems are long term, but worth considering. Campaigns against the spread of the Mexican Mesquite can involve the continued use for fuel and with the addition of using its wood

for furniture and construction, and its pods for livestock feed and flour. This has been done successfully in South America, India and Niger where the plant has also invaded and taken a stranglehold of the landscape, but in these countries, people have learned to look upon the plant as a resource and have successfully arrested its increase.

The response to poisoning could be more immediate in the form of a total countrywide ban, but without punishment abuse could still, and often does, continue in more remote areas. Education against its effects from a young age can have more permanent impacts over the long run, and some success is being seen with education programmes held in conjunction with the International Vulture Awareness Day scheme.

These strategies, although dependent on a huge change in attitudes and practices, can work with careful implementation. Lake Naivasha has already suffered the indignity of being downgraded to the Montreux Record of degraded wetlands due to the unsustainable fashion in which it has been exploited by industry. Lake Baringo can and should avoid this embarrassment with some warranted and necessary effort.

As I sit on the shores of the lake at Robert's Camp, gazing at the sun setting over the horizon, lighting up the lake's surface with a shimmering glow, I can't help wondering what Baringo would be like without its charismatic hunters: its crocodiles and its Fish Eagles. Would it produce such amazement, encourage such inspiration? Or would it become just another 'muddy puddle', resigned to this fate because of neglect and mismanagement? ●



Vulture fatigue off the agenda at Maasai mara summit

THE AUTHOR



RUPERT WATSON is an advocate, naturalist and writer and the author of “*The African Baobab*”, published by Struik in South Africa and sadly almost out of print. He lives in Nairobi.
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When did you last see an Egyptian vulture, watch those black and white underwings set against the brilliant blue sky above or see the bird on the ground pecking among the rubbish like a chicken? Once as common as kites around rural villages, you could now travel all over Kenya for months and never see one.

The first of the seven volumes of *Birds of Africa* appeared in 1982 and when introducing the Egyptian vultures (*Neophron percnopterus*) the authors saw fit to remark that within its range it was “... frequent to common, sometimes locally abundant in towns. Probably decreasing slowly through improved sanitation, but not at present threatened.”

How could those writers know that thirty years later, the most likely response to that question, “when did you last see an Egyptian vulture” is “so long ago I can’t remember”? How could they have foreseen that animal carcasses, infused with poison to kill large carnivores, would have brought the Egyptian vulture so close to extinction in much of East Africa and the area’s other species so rare as to be cause for comment any time we see them. Indeed, of the eight species that occur in Kenya, six are listed as Red Data (four endangered and two vulnerable) and vultures as a group are the most threatened vertebrates on the planet.

East Africa’s vultures are far from alone in declining so dramatically, and





in response to a near-global crash in numbers, the first Pan-African Vulture Summit was convened at Ilkeliani camp in the Maasai Mara, with the considerable support from the Reserve authorities, from 16th-20th April this year. The thirty-five plus participants were united in their passion for raptors, but beyond that their backgrounds were intriguingly different. Most represented organisations, and these were as diverse as the University of Swaziland, KWS, the US Hawk Mountain Sanctuary or Israel's Nature & Parks Authority. A few Egyptian vultures migrate from northern Africa to breed in the Balkans, which is why Iyaylo and Stoycho from Bulgaria also came to be there. They had paid much of their own costs, as had Warren Goodwin, originally from

Zimbabwe but now in Australia, and who had come all that way because he just damn well cared.

Much of the Summit was devoted to specific talks analysing the causes of the crisis, which became so dramatically apparent first in south Asia. There it took several years of dedicated research before the cause of the continent's plummeting populations (from an estimated 40 million oriental white-backed, long-billed and slender-billed vultures in India and Nepal to less than 10,000) was finally identified. Diclofenac is an anti-inflammatory drug used to treat the symptoms of a variety of livestock sicknesses; many treated animals died and vultures feeding on a treated carcass were also likely to die. Now the manufacture, import and use of veterinary Diclofenac is banned in India, Nepal, Pakistan and Bangladesh and alternative - and

safe - anti-inflammatory drugs have been identified. Meanwhile surviving populations are heavily protected, and captive breeding programmes aim to supplement wild populations once the drugs are completely out of the food chain.

In Africa, the Summit recognised that the story is a different one, and while poison still lies at the root of the decline in at least East Africa's vultures, elsewhere in the continent, it is compounded by habitat loss and trade in dead vultures for witchcraft purposes or for food (selling vulture meat as chicken); increasingly, electrocution and collision with power lines and wind turbine blades are also taking their toll.

The primary killer of vultures in Kenya has been well recognised



teaching them all the way about its route it and how fast it flew. Arrived in its wintering quarters, the bird stopped moving, but the transmitter continued transmitting. Seriously concerned, they sent their Chadian counterpart to investigate. The signal lead to a hut in a remote village, where the owner explained how the transmitter came to be there. Seeing the vulture feeding on a dead cow with the box strapped to its body, he had assumed the bird to be involved either in Arab spying or bad voodoo, or both, and so had killed it. He was happy to return the transmitter, and while the creature died in the cause of research, it had not died in vain, in that at least it had revealed its journey and its destination to its monitors.

Particularly interesting for Kenyans were the sessions and discussions on the effect of wind farms and transmission lines on large raptors. Each case is so different that it is difficult to extrapolate evidence from one and apply it to another - and in many places, jackals run off with the carcasses before they can contribute to the statistics. So, quite what will be the impact of the Turkana wind farm, or the transmission lines from the Gibe III dam in Ethiopia, on vultures and other birds, is largely a question of "wait and see". The South Africans were horrified at the possible impact of the proposed 4,000+ wind turbines on the crest of the Drakensbergs, just inside Lesotho, on their relatively healthy population of bearded vultures (*lammergeiers - Gypaetus barbatus*).

Raptor specialists often confine their ornithological enthusiasm to just that - raptors - but many of the delegates at the Summit dangled binoculars - Swarovski

THE PRIMARY KILLER OF VULTURES IN KENYA HAS BEEN WELL RECOGNISED AS THE CARBAMATE-BASED INSECTICIDE RETAILED AS FURADAN.

as the carbamate-based insecticide retailed as Furadan. Manufactured in the United States, this is sprinkled over carcasses either to avenge, or prevent, the killing of livestock by large predators. Either way, the vultures are generally unintended victims, although their dependence on carrion makes them a deliberate target for poachers whose illegal activities may be exposed by spirals of vultures above slaughtered animals. Relying, as they do, on scavenging, and also feeding communally, makes the birds devastatingly vulnerable to a poisoned carcass; perhaps the largest recorded case of vulture poisoning was in Athi River, where 187 birds found dead at one carcass.

While identifying the causes of the population declines may be relatively simple, reversing them is certainly not. Many research-orientated participants at the Summit still felt there was still a need to further monitor populations, while others opined that this was a case of fiddling while Rome burned

and the time had come for immediate action. What this should be was not easy to agree. Should governments be pressurised to enforce their own laws better, or should the Summit focus more on the root causes of the breaches of the law and, for example, work to make livestock enclosures more predator-proof? One suggestion, which resonated with nearly all the delegates came from KWS's highly articulate Dr Charles Musyoki, and this was for everyone to work on an international strategy and then domesticate it in respective countries.

Many of the southern Africans had regional perspectives, but were less inclined to see population declines as pan-African problems. However, the presence of the Bulgarians, and their excellent presentations did much to put the problems in wider contexts - as did their story of the Egyptian vulture to which they had attached a transmitter after it had finished breeding.

They tracked the bird from its Bulgarian nest site to Chad, the beeps

FACTS TO KNOW



certainly preferred - round their neck even while they listened to their peers. A splendid viewing deck at Ilkeliani provided a vantage point for spotting not only migrating raptors but also bee-eaters, swifts and swallows all heading north; white headed saw-wings flitted up the river and a variety of cisticolas skulked in the riverine vegetation, revealing themselves only to those who could identify their songs. Particularly obliging was a resident silverbird right beside the gate into the camp, which provided a first for many of the southern African delegates, and for Yilma Abebe, the single representative from Ethiopia.

The Summit's last two days were reserved for discussions and the adoption of an action plan. The Summit had been convened under the IUCN's Vulture Specialist Group, providing an invaluable umbrella for interested organisations from different countries to work together. It recognised how important it was to strengthen this entity to try and give it some identity of its own, and also unanimously resolved that delegates should work on their respective African governments and the agencies for wildlife protection to:

- recognise that vultures provide vital ecosystem services and are a critical component of ecosystems
- effectively regulate the import, manufacture, sale and use of poisons, including agricultural chemicals and pharmaceutical

products known to be lethal to vultures

- legislate and enforce stringent measures to prosecute and impose harsh penalties on perpetrators of poisoning and those illegally trading in vultures and/or their body parts
- ensure appropriate levels of protection and management for vultures and their breeding sites
- ensure that all new energy infrastructure is vulture-friendly and that existing unsafe infrastructure is modified accordingly
- and to support research, capacity building and outreach programmes for the conservation and survival of healthy vulture populations.

Summits, workshops, conferences, all are only as good as the action that follows them - as anyone who watches the rounds of Climate Change get-togethers will be only too aware. Vulture enthusiasts have one extra difficulty in putting their words into actions, as summarised by Charles Musyoki. After governments have been badgered about the plight of rhinos, elephant, cheetahs and so many more, "by the time they get to vultures they are tired"! Yes, vulture fatigue may be afflicting conservation agencies but certainly not the delegates of this Summit who can surely harness the massive public awareness of the plight of these icons of the savannah. ●

- Conflict between people and wildlife is a major issue in both wildlife conservation and rural development. In Africa's savanna grasslands, species such as African wild dogs (*Lycaon pictus*), cheetahs (*Acinonyx jubatus*), lions (*Panthera leo*), leopards (*Panthera pardus*), and spotted hyaenas (*Crocuta crocuta*) may kill livestock and are therefore themselves killed by local pastoralists. Such conflict has led to the extirpation of these species from many areas, and also impacts the livelihoods of local livestock farmers. Other non-mammalian species such as avian scavengers are also heavily impacted.
- Seven species of avian scavengers that occur in and around the Masai Mara are listed as Red Data Species. Endangered – African White-backed, Ruppell's, Hooded and Egyptian Vulture; Vulnerable – Lappet-faced and White-headed; Near-threatened - Bateleur
- The Masai Mara – Serengeti Ecosystem is the most important feeding area in Africa for avian scavengers, particularly for obligate scavengers like vultures.
- Avian scavenger populations in and around the Masai Mara have declined by nearly 60% over the last two decades.
- Avian scavengers provide vital ecosystem services by cleaning up carcasses hence keeping the environment clean, recycling nutrients and helping to prevent the spread of diseases that can have economic and health consequences.
- Retaliatory poisoning by pastoralists as a result of livestock depredation from terrestrial carnivores (Lions, Leopards and Hyenas) has caused innumerable mortalities in populations of avian scavengers.
- Protected areas offer a potential solution to lion and avian scavenger conservation but may fall short if they are too small or are surrounded by human populations.
- Work done by Corinne Kendall in collaboration with The Peregrine Fund in the Masai Mara has shown that the annual mortality rate from secondary poisoning of vultures based on data from GPS-tagged vultures is >25% which is unsustainable in the long term and will result in the extirpation of vultures with ramifications for human and wildlife health and the tourism industry.

Tsavo's Newest Royal Family

The year 2012 has sadly started off as a challenging year for Kenya's lions. A number of our precious big cats have been lost to poaching and human wildlife conflict country wide.

As a Wildlife Photographer and KWS (Kenya Wildlife Service) Honorary Warden, I've been privileged to have spent a considerable amount of time with Tsavo lions, enough so, that over the last six years I have managed to study and document the lives of particular individuals and lion prides. One of these is a lioness called "**Mrembo**".

I have been following the life of "**Mrembo**" for the last two and a half years. She was a solitary lioness and quite successful at her solo survival skills up until eight months ago when she teamed up with another solitary female called "**Mjuvi**".

"**Mrembo**" is a proud new mother of three. The birth of these cubs is an exciting occasion for Tsavo lions and at just over three weeks old where they begin to walk adventurously, I was very privileged to have seen and photographed these adorable little cubs for the very first time. ●

Shazaad Kasmani

Wildlife Photographer and KWS Honorary Warden





PHOTOS BY SHAZAAD KASHANI

AHOY THERE. CAMERA AFLOAT!



PAOLO TORCHIO is a wildlife enthusiasts who live in Kenya. You can see more of Paolo's work on: paolotorchio.net

The rains have finally returned to Kenya, the level of the lakes is far higher than in recent years and most of the birds are enjoying the "back to normal" situation. But not all the birds. Flamingos feed on algae that reproduce only

in alkaline water, and the enormous quantity of new fresh water has drastically changed the acidity of lakes such as Nakuru, the famous home of thousands of the beautiful pink birds.

So they have migrated in search of food, and surprisingly, as a destination, have chosen a small lake, close to lake Naivasha: lake Oloidien.

It is not widely known to tourists, who normally visit the better-known lake Naivasha, but it is home to a large family of hippo and an amazing number of different bird species.

You can see thousands of pink flamingos resting and feeding along the shore of the lake, where the water is not too deep - a perfect photographic opportunity.

But the challenge was to take pictures that were different from the usual shots

we see, and the only way to do so was to change the distance and angle of view. It was the time for my floating camera!

So I assembled a light platform on some plastic floats, evenly distributed, and a waterproof bag for a camera fitted with wide angle lens and a radio remote control. A mimetic cover to elude the birds was the final touch.

I positioned the floating packet in the shallow water where the flamingos normally spend the days in great numbers, just waiting for them to cool down and accept the presence of a strange new object in their water.

It took a while, but finally the flock of birds gained confidence and slowly approached the camera, giving me the opportunity to capture them from an unusual point of view. ●

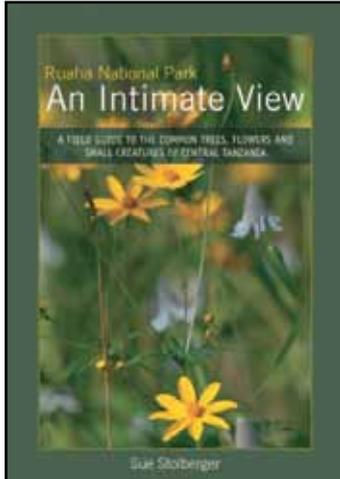




PORTFOLIO







**Ruaha National Park –
An Intimate View by Sue
Stolberger**
Published by author.
ISBN: 978-0-620-52130-7

Review by Quentin Luke

We all say we are going to 'do' a book on the plants of a country or an area but few of us actually get round to doing it. Sue Stolberger has not only done it, but has published it herself. There are two aspects of this field guide that make it unique: the first is the fact that the

author admits to no formal training in Botany or Biology; the second is that she has spent some 17 years studying her subject before crafting this joyful introduction to one of Tanzania's most admired National Parks. This is no gallop through some well known trees, rehashing tired descriptions culled from previous books with little personal knowledge. It brims with first hand experience of the plants, the habitat and much of the less well known fauna. The simple love of her 'home' and all its decorations shines out of each page and cannot fail to impart to the reader a greater understanding and a desire to conserve this wilderness.

Sue is a 'paint' artist working alongside her sculptor partner to produce images of this Park from the 'raw'. Whilst capturing the spirit of the place on canvas she has gradually explored its full diversity and used whatever source available to dig up identifications, behaviours, dependencies and interactions. Her strongest message is that 'anyone can do it, if you love it enough you will learn about it and be able to teach others'. She has classic advice for anyone wishing to start learning about trees: "Go up to the tree, take a leaf and/or flower and pod, and take a really good look at the bark. Imprint the pattern of the bark on your mind....."

The layout is clean and extremely generous with masses of photos, each species getting 1-3 pages with up to seven photos covering the habitat, the bark, the flowers, the fruits etc. The photos are generally of high standard, as is the reproduction (Print and Production by the well known Jacana Media of South Africa). After the introduction and a basic pictorial glossary of plant terminology (not too daunting for the non-botanist) an index of tree and shrub species is set out using 'leaf type'. Within each leaf type section, the species are ordered alphabetically using their scientific names. The leaf shape works very well in the southern African 'bible', Coates Palgrave, so I see no reason it should not work here. There is a 'flip tag' showing each leaf type (for those that can't be bothered to use the index) and this is colour coded with the next section which is "Flowers listed according to season". This is a great idea for the visitor who, knowing that it is, say, mid-November, can restrict scanning to just that section to find the name of a flower of interest plus some information about it.

Most species accounts are headed with a banner of various local names (e.g. Hehe, Maasai, Swahili) and a 'common' English name. This is where I have a problem. Although I agree entirely with Brian Finch, when he wrote a piece in Swara some time back, extolling, nay, demanding common names to enable people to process and store information on species, I do not agree with importing names from elsewhere. Many East Africa guide books have started adopting South African names and I strongly oppose this. There are enough examples of neo-colonial expansion by RSA, without us using 'Snot Apple' and 'Bushwillow'. In the absence of time-tested English names for the region I would rather support the author's attempts to coin names

(Ruaha Wild Mango, Fluted-stem Cordia) than to import wholesale from the south, but maybe SADEC will impose the names on Tanzania as part of their treaty!

The local name banner is then often followed by an explanation of the scientific name, either a translation of the Latin/Greek or some history on the personal names (Goetze, Rauwolf, Stuhlmann etc.). This is a great feature and should be mandatory for all plant books. The text then follows under headings: General Description; Location (where to find in Ruaha NP); Diagnostic features and seasonal changes (great); Points of Interest and Human Uses – these last two are what gives the reader most 'buzz' and helps in fixing the plant in memory. The telling of medicinal uses is always dangerous and I am surprised the author has not been advised by some lawyer that since many of the Park's visitors are litigious Americans, each "Human uses" must be prefaced with "don't try this on yourself, the author accepts no responsibility for death or disfigurement etc."!

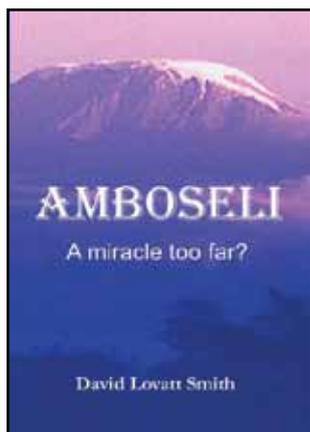
The plant species pages are interspersed with informative articles on places within the Park (Kimilimatong Hill, Msembe area, Mwangusi Sand River etc.), articles on fauna (Insects, Reptiles etc.) and some very random articles on such subjects as Women's Health, Tanning, Notes on mozzies and malaria. These are designed to inform and entertain a visitor as they have an afternoon siesta or trek from one piece of mega-fauna to another. Some articles (e.g. Climate Change and Feeding the World) are by a guest author, Colin Tudge, who many people will know from his contributions in New Scientist. The index to these articles is in the back after the indices for scientific names and local names so don't look for it amongst the species listings in the front. One of the more 'wacky' articles to be found in a tree book is on 'Biophotons' that, in my ignorance, I classed with healing crystals and general pseudoscience until I read it up. Sue gives credit to a German, Popp, for this habit of cell 'flashing' but according to Wikipedia the credit should go to a Russian, Gurwitsch, many years earlier. So on a dark night you should be able to catch the wildlife of Ruaha talking to each other!

Are there errors in nomenclature? With the rapid changes happening in the botanical world due to genetics taking over from morphology, an author can be forgiven for being a little behind on some more recently accepted names. The transfer of *Azanza garckeana* to *Thespesia garckeana* and *Hygrophila auriculata* to *H. schullii* are very recent and Sue is perfectly up-to-date on *Philenoptera*, *Faidherbia* and *Ocimum gratissimum*. There are, however, a few mis-applied names. *Euphorbia ingens* is, as far as I know, strictly southern African. The tree illustrated I think is our *E. candelabrum*. The page on *Sansevieria kirkii* has a photo of what could be *S. suffruticosa*, *S. kirkii* does not occur in Ruaha although it features on the Bjørnstad checklist of the area. Anders Bjørnstad, a Scandinavian, spent some 3 years (1970-73) based in Ruaha making a thorough botanical inventory, which was published through the Serengeti Research Institute in 1976. He built on the initial work of Peter Greenway and Mary Richards and produced a list of 1,512 vascular plants. I have spent time recently updating this list and if the records that were not identified to species are removed, 1,438 plants remain. I did a rough count of the plants covered in *An Intimate View* and found about 160 so there are many more out there for Sue to write about and for a visitor to discover. A few other corrections: *Stylochiton lancifolius* should be *Stylochaeton borumensis*; *Dipcadi viride* should be in *Hyacinthaceae* not *Alliaceae*; *Solanum incanum* is now known as *Solanum campylacanthum*; *Blepharis linariifolia* is *B. edulis*; *Centomopsis* species is *Cyathula orthacantha*; *Sphaeranthus incisus* is most likely *S. suaveolens* (*S. incisus* is a southern species); and *Vernonia* species is *V. anthelmintica*.

It is unusual for TANAPA, the Parks' authority in Tanzania to allow such long term residence, in fact, even trying to do research in the Parks is fraught with bureaucratic hurdles and delays. In this case, TANAPA have been rewarded handsomely with a guide book that will not only satisfy their visitors but also encourage others to visit. It is

something that many of us have said is desperately needed for all of East Africa's parks and reserves. I hope KWS is listening when I say..... encourage the production of books like this and you will reap untold PR and increase in gate takings. I can't wait to take my copy down to Ruaha and I hope we meet up with Sue and Rob for some additional gems.

**AVAILABLE AT THE SOUK BOOKSTORE,
DAGORETTI RD, KAREN
www.souk-kenya.com**



AMBOSELI – A MIRACLE TOO FAR?

**By David Lovatt-Smith
Reviewed by: Ali A. Kaka**

Just when you thought the popular stream of personal memoirs from days-gone-by Wardens in the wildlife (Game as it was commonly referred to then) had dried up, here comes David Lovatt-Smith with an account of his life in the National Parks of Kenya and in particular Amboseli, which was a National Reserve at that time.

The book is a more comprehensive account than the earlier, much shorter version written by David on Amboseli.

I found David's story rather refreshingly different with more substance on the people of the area, the Maasai, and their historical role in Amboseli, and less on himself. I admit he has also cleverly interwoven his personal experiences in the area well with those of the Maasai.

The tumultuous history of the Reserve and then Park has been painfully recorded rather well in the book. The Park's ardent Wardens' all too familiar run-in with the short sightedness of the "higher authorities" at the time has been so well elaborated in this volume. It will leave anyone who is not too familiar with the topic shaking their heads in bewilderment and even those who are familiar with it with either a smirking or collapsing in laughter. Such is the irony in the history of National Parks in Kenya to this day.

The more contemporary part is contained in the later portion of the book. The new changes in administration of the Park after the country gained independence is a story in itself but more interesting is the tragic tale of how institutional memory over the history of how the area evolved was completely ignored, thus starting a spiral of decline in the relationship with the original landowners, the Maasai. The author is clearly at pains in trying to relive this memory in the book but also his persistent efforts during his numerous visits to Kenya and in meetings with different Directors of KWS. David's frustrations come out loud and clear.

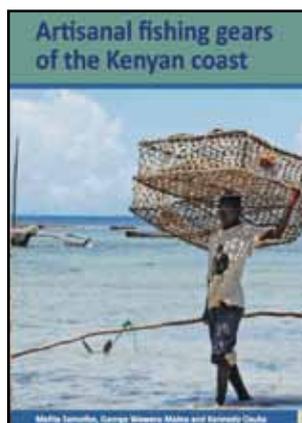
What may seem like an almost accidental creation of community conservation areas in Kenya, Amboseli actually led the whole country on this idea and along this path. The book gives a very good introduction to the simple way of establishing this concept. Of course, since then there has been almost an explosion of community-managed areas in Kenya, inadvertently becoming more and more complicated in the process.

Amboseli – A miracle Too Far? This is a story well told by David of his most interesting experience in and around the Park during its inception. I wish there were more factual records of how other Parks came into being in Kenya. I am sure there are stories to be heard out there which would help remind us that this is something worth fighting

for and to make sure their future is secured from politics and bad management.

I hope David will consider carrying on with the story on the Amboseli saga. Despite the irony and record of trials and errors, this story is far from over.

ERRATUM – SWARA 2012-02 inadvertently published a photograph of the wrong book in Joy Juma's review. We re-publish that review, with the right book, below



ARTISANAL FISHING GEARS OF THE KENYAN COAST

**By: Melita Samoilys, George Waweru Maina and Kennedy Osuka
Published by: CORDIO East Africa
First Edition 2011
ISBN: 978-9966-21-115-6**

Review by Joy Juma

Simple, relevant and straightforward is the summarized description of

the book. This publication comes at a very timely period in the fishing industry, where the government is in the process of reviewing the use of Ring Net fishing along the Kenyan coast amid confusion over its legality and use.

As described in the book, a Ringnet or "Nyavu ya Kufunga", the Swahili term, is a "small purse seine (1.2 – 7.6 cm) made of multifilament nylon mesh netting which is suspended from floats and weighted at the bottom....it is deployed from either a single vessel or by a 'mother' vessel and a smaller support vessel, with a crew of 15-40 fishers" It targets offshore surface water species such as tuna and in outer reef slopes it catches fish living near or at the bottom of the sea such as snapper.

The book further describes the negative impact of Ring net fishing on the habitat and fish populations that include damaging living seabeds; damage to corals; targeting spawning aggregations; as well as catching a high number of juveniles and discards. It suggests that if it is properly deployed offshore in surface waters in depths of > 50 m it can be a very cost effective fishing method. This fishing gear which is neither traditional nor modified traditional is listed as introduced and currently under legislative review.

The publication therefore gives the reader a brief and clear summary of 15 types of artisanal fishing gear used along the Kenyan coast. It highlights: the Swahili name of the gear; the type of gear (traditional, introduced or modified traditional); the dimensions and units; how it is deployed; the target species; the by catch; the impacts on fish populations and habitat; the advantages and the legislation governing its use. Each gear is limited to two pages with photographic references hence does not overburden the reader with information.

The book is a much needed reference book that will contribute towards sustainable fisheries by providing clarification on the different types of artisanal fishing gear for managers, fishers and other relevant stakeholders. It is simple, easy to read and clear, thus it is easily understood by a large audience. We might just need a Swahili version to complete it!



Of all the petrol stations in all the world...

BY FELIX PATTON

We drove thousands of kilometres in six days in search of some of Kruger Park's famous 10,000-strong rhino population. But we found only five. My article about our South African safari appears in the Conservation section of this edition of SWARA.

So we set off for the 500 km drive to Harrismith on the edge of the Drakensburg Mountains after an early morning, last-ditch game drive. Again no luck in the rhino department, so we left Kruger a little disappointed.

Within a few minutes of leaving the Park we were racing along the main N4 with no hope of seeing any more of South Africa's rhinos. Lunchtime was soon upon us so the decision was made to stop at the next opportunity.

We were some 10 km from Malelane, between Belfast and Middelburg. The sign read ALZU Petroport, offering petrol, food and WC, which sounded ideal. Clearly a new service area, opened in September 2010, the slip road led straight to the TOTAL fuel station and then next door to the Bonjour convenience store, Steers Express restaurant and Mugg and Bean coffee shop. A typical service station – or was it?

TOP: The white rhino mother and calf walking in the enclosure.
BOTTOM: The white rhino male sharing the waterhole with zebra.
TOP RIGHT: The tower of the ALZU Petroport
BOTTOM RIGHT: Zebra and ostrich can be seen in the game enclosure.

PHOTOS BY: FELIX PATTON

As ever, the toilet was the most required facility. Nice and airy, the Men's had a unique feature as the urinals were against a wall with a large long window to the outside world. And what was to be seen through the window but **WHITE RHINOS!**

The toilet looked out over a game enclosure containing rhino, buffalo, eland, blesbok, ostriches and zebra. The white rhinos were a mother, its calf and a male. The adults had been dehorned for security against poachers. Eating our picnic lunch on one of the bench seats overlooking the enclosure watching the white rhinos eating theirs was a surreal experience.

With apologies to the film Casablanca – of all the service stations in all of South Africa, (possibly even in the whole World) we had found the only one with rhinos! ●