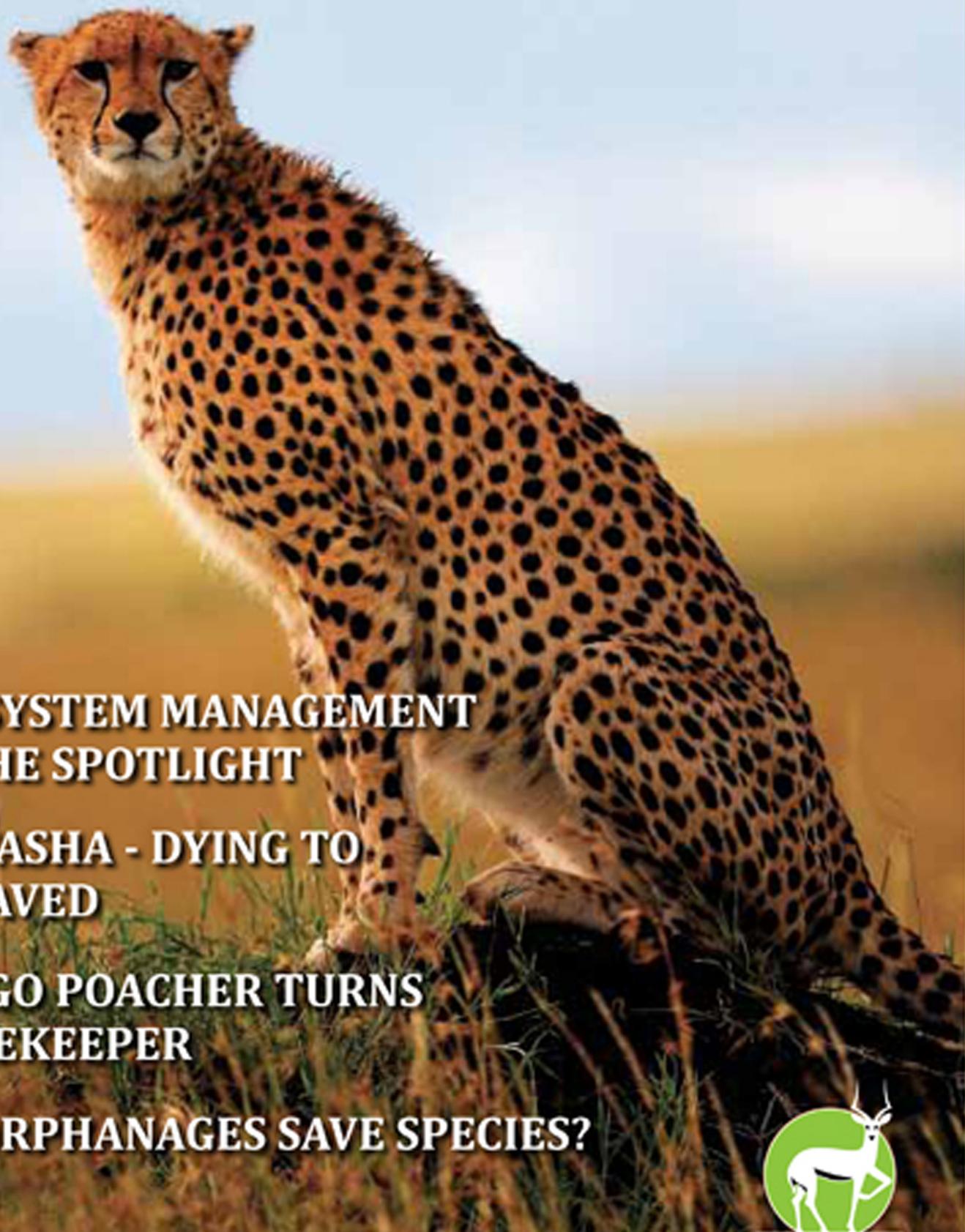


THE VOICE OF CONSERVATION IN EAST AFRICA

2010: 02 APRIL - JUNE

SWARA



**ECOSYSTEM MANAGEMENT
IN THE SPOTLIGHT**

**NAIVASHA - DYING TO
BE SAVED**

**CONGO POACHER TURNS
GAMEKEEPER**

DO ORPHANAGES SAVE SPECIES?



East African Wild Life Society



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FRONTLINES

- 5 Letter from the editor
- 6 Letters to the editor
- 10 Chairman's letter
- 12 Director's letter
- 14 Opinion

CONSERVATION

- 16 THE ABERDARES - COULD ITS MANAGEMENT PLAN WORK ELSEWHERE?
Colin Church charts the way conflicting interests were united by an electric fence
- 22 SERENGETI - A COLLABORATIVE APPROACH TO CONSERVATION
Laura Hartstone traces the origin of a plan to conserve and enrich one of the world's seven wonders
- 26 WORKING WITH MAASAI TO STEM LION KILLING AND SAVE WILDLIFE
Gap-year student **Rufus Camm** checks out a scheme to offset what the Maasai lose because of predators
- 30 CARNIVORE - LIVESTOCK CONFLICTS - WHAT ABOUT HUMANS?
Mordecai Ogada questions the rationale of compensation schemes and asks where the human factor is
- 34 LAKE NAIVASHA - AN ECOSYSTEM DYING FOR MANAGEMENT
Naivasha resident **Don Turner** bemoans the desecration of a Kenyan jewel and the harm all its residents suffer
- 38 A NEW APPROACH TO CONSERVATION IN GRUMETI
Laura Hartstone tastes the delights of a high-end lodge in Tanzania whose owners say conservation had to start from scratch

SPOTLIGHT

- 42 CORNEILLE EWANGO - A POACHER'S SIDEKICK TURNED PRIZE-WINNING CONSERVATIONIST
Curtis Abraham interviews a young Congolese who started life killing game but is now a devoted and decorated conservation warrior
- 46 DID YOU KNOW SOME BIRDS SEND SMS MESSAGES?
Corinne J. Kendall explains how text messages are helping conservationists track key bird species
- 50 FLOWERING MOUNTAIN
Dino Martins waxes lyrical about an unsung Kenyan beauty spot, especially its flowers
- 54 PORTFOLIO
STEALTH AND THE CITY - THE PREDATOR OF NAIROBI STREETS
Munir Virani hails the predator that uses his Nairobi office as a look-out point
- BOOK REVIEW
- 57 MEDICINAL PLANTS OF EAST AFRICA
Siro Masinde welcomes an updated guide to natural *dawa*
- 58 IN SEARCH OF THE AFRICAN WILD DOG
Samuel Maina enjoys this look at a much-maligned species
- REAR WINDOW
- 60 MEET ELLA, THE STRESS-FREE RHINO TRUCK
Elodie Sampéré sees a luxury transporter for rhinos delivered





PICTURE BY PAOLO TORCHIO

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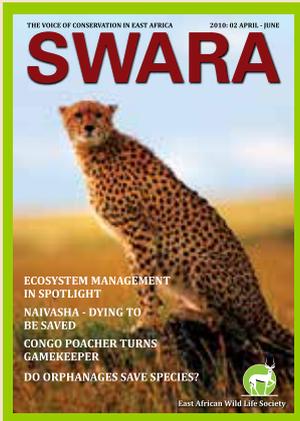


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Editor

Andy Hill

Editorial Board

Nigel Hunter, Michael Gachanja,
Esmond Martin, Dr. Stephanie
Dloniak, Prof. Patricia Kameri-Mbote

Design & Layout

George Okello

Circulation and Subscriptions

Rose Chemweno

Advertising

Roy Kiptanui

SWARA Offices

Riara Road, off Ngong Road,
Kilimani, NAIROBI

SWARA Magazine
P O Box 20110-00200
NAIROBI, Kenya

Tel: + 254 (20) 3874145

Fax: + 254 (20) 3870335

E-mail: info@eawildlife.org

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

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EAWLS Head Office

P O BOX 20110 – 00200,
Riara Road, Kilimani, Nairobi
Tel: 254-20-3874145 Fax: 254-20-3870335
Email: info@eawildlife.org

Members are requested to address any
queries to the Executive Director
director@eawildlife.org

Letters to the Editor: swaraeditor@gmail.com



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EAWLS WORLDWIDE REPRESENTATIVES

AUSTRALIA

Trevor Fernandes
Wildlife Safari
(Australia)
213 Railway Road
Subiaco WA 6008

BELGIUM

John Rowland
11 Rue Faider
1050 Brussels

Robby Bolleyn

Fotografie
Dascottelei 95 Bus 7
2100 Deurne-Antwerpen

CANADA

Dr N J C Mathews
12-1400 Park Street
Pemberton
V0N 2L1

GERMANY

Klaus Fenger
Zugspitzstr. 65
8100 Garmisch-
Partenkirchen

Jutta & Dirk Ohlerich
Schutzbaumstrasse 50
D-63073 Offenbach

IRELAND

David Bockett
30 Zion Road
Dublin 6

KENYA

Mark Easterbrook
P O Box 208
Malindi

Suthar Kiran
P O Box 1000
Meru

NETHERLANDS

Stichting EAWLS
Ridderhoflaan 37
2396 C J Koudekerk A/D
RIJN

SPAIN

Lidia Sanchez Rugules
c/o Nutria 26
La Moraleja 28109

SWEDEN

Hugo Berch
Össjö Gård
S-266 91 Munka-Ljungby

SWITZERLAND

Anton-Pieter Duffhuis
Vollenweld
CH – 8915 Hausen Am
Albis

Therese & Bernhard
Sorgen
Erlenweg 30
8302 Kloten

POLAND

Grzegorz Kepski
Bialobrzaska 30/39
02-341 Warsaw
Poland

UGANDA

Michael Keigwin,
Uganda Conservation
Foundation, P O Box
34020, Kampala

UNITED KINGDOM

Prof Bryan Shorrocks
Environment Dept.
University of York
Heslington
York
YO10 5DD

USA

Keith Tucker
Chief American
Representative
Acacia Travel, 19985
Powers Road, Bend,
Oregon 97702 USA

Mr & Mrs Harry Ewell
Financial
Representatives
200 Lyell Avenue
Spencerport
NY 14559-1839

Wil Smith
Karen Zulauf
Deeper Africa
4450 Arapahoe Avenue
Suite 100, Boulder
CO 80303
www.deeperafrica.com

Kurt Leuschner
70065 Sonora Road
#267
Mountain Centre
CA 92561

Lawrence A Wilson
3727 Summitridge Drive
Atlanta
GA 30340

Gordon Crombie
2725 Park Ave
Franklin Park
IL 60131

Grant & Barbara Winther
867 Tauric Pl. NW
Bainbridge Island
WA 98110

Wildlife Safari (USA)
346 Rheim Boulevard
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CA 94556

Charles Kasinga
Kenya.com Inc
16152 Beach Blvd
Suite 117
Huntington Beach
CA 92647-3523



This issue is largely devoted to the management of ecosystems, a subject that could fill a library, let alone a quarterly magazine. We've decided to devote this issue, and the next one, specifically to this topic because conservation means finding ways to save and manage what we have for the benefit of everyone involved.

Colin Church (pg 16-19) tells us that the Aberdares model

works for habitat, community and tourism; Don Turner (pg32-35) explains that the failure to implement a management model risks destroying one of the wonders of Africa, if not of the world. As the Director's letter (pg11) reminds us, there is no point having rules and regulations if they are flouted. Those of us who live in Africa will recognise the dilemma – there are laws, sensible and practical ones, but they are not obeyed. How many of us sigh in despair when a matatu (communal taxi) speeds by at 120 km/h with an 80 km/h state-endorsed speed limit on the back? It may be a petty example, but Nigel Hunter's letter shows us that licences for development can be as meaningless as those 80-km/h speed limit stickers.

There are two pieces (Laura Hartstone (pg 36-39) and Curtis Abraham (pg 40-42) about

poachers who have become 21st century gamekeepers, a sign, surely, of a growing awareness in Africa of the need for conservation, above and beyond the need to put meat on the table. This is the kind of awareness the EAWLS is trying to build on to get more people in Africa and overseas to push for sensible governance of their heritage. Help us please. Enlist your friends as members.

Successful advocacy is about getting a groundswell of opinion of such proportions that policy-makers and decision-takers ignore it at their (electoral) peril. What is happening with the Mau Forest is an example of advocacy at work – and the EAWLS is closely involved in shaping what is happening in that corner of Kenya, and in government offices in Nairobi. Let's hope everyone respects what is agreed. ●

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Dear SWARA,

CITES got it wrong on ivory sales - and elephants are the losers. The 15th Conference of Parties to the Convention on International Trade in Endangered Species (CITES) ended March 25 in Doha, Qatar. For two weeks, 175 national delegations conferred and clashed over plummeting bluefin tuna stocks, the status of polar bears, endangered Iranian newts and, once again, the elephant-sized shadow of the ivory trade.

Ivory is an endlessly contentious conservation issue that just won't go away. Recent elephant killings have spiralled sharply upwards, recalling the poaching crisis of the 1980s. That slaughter halved the continent's population and led to the adoption of a ban on cross-border trade in ivory in 1989.

Contrary to many media reports, the current continent-wide 500,000-strong elephant population, although vulnerable, is actually increasing - the losses to poachers are offset by burgeoning herds in southern Africa. Still, continued killings and a thriving illicit trade in tusks provide stark evidence that the ivory ban hasn't worked the way its advocates hoped.

The red flag for animal advocates at CITES was the effort by Tanzania and Zambia to win approval to sell their government stockpiles of legal ivory. Such "one-off" ivory sales have happened only twice before, in 1999 and 2008, and raised \$20 million for elephant conservation.

Many observers said the two countries did not have a convincing case that their national herds were sufficiently well-managed to be "downlisted" to a less-threatened status, which would allow regulated trade in their products. There were also concerns about the documentation of their stockpiles. As a result, their proposals were defeated.

But that's hardly reason to celebrate, as many animal advocates have done. In fact, the fixation on preventing legal ivory sales distracts policy-makers from coming to grips with the underlying causes of ivory

poaching: human desperation and poverty; corruption; underfunded and ineffective wildlife departments; and unregulated domestic ivory markets operating openly in many of the 37 African elephant range states.

Animal advocates insist legal ivory sales stimulate poaching. It's a claim that has been repeated so often that it's widely accepted as fact, when it's anything but. According to TRAFFIC, the joint IUCN/WWF wildlife trade monitoring network, illicit trade in ivory declined for five years after the 1999 sale of ivory to Japan. After that, illegal trade began to rise, and the trend was well underway before the 2008 ivory sale to China and Japan.

Instead of lobbying at CITES for the imposition of a 20-year moratorium on ivory exports backed by Kenya and Mali, which failed to gain support, animal advocates should have given serious consideration to how a consistent flow of ivory could actually help elephants. The real problem with one-off sales is that they can't be counted on to happen, which makes the flow of ivory unpredictable. That keeps the black market and its elephant poaching gangs flourishing. You don't need a degree in economics to grasp that annual or biennial sales of certified stocks could serve to undercut the illegal trade. In the 2008 sale, legal ivory sold for \$75 a pound. Contraband tusks sell for three to five times that amount. If the former were available, who would risk buying the latter - and for far more?

Granted, it would take enormous effort and resources to reach the level of enforcement, certification, and international cooperation necessary to run a highly regulated legal ivory market, but it is the only way forward. Five years of research on the history of ivory has convinced me that it's a fantasy to think that the age-old desire for this seductive carving material, valued globally since pre-history, will ever disappear.

The key to converting ivory demand into something that helps elephants is to use the huge supply of gleaming tusks

routinely recovered from the carcasses of elephants that die of natural causes. This guilt-free ivory is kept in vaults by African governments in the hope that someday their "white gold" can be sold. It's estimated that up to a 100 tons of ivory supplied by the natural mortality of the continent's elephants could be recovered yearly. That's enough to supply the domestic ivory market in China and Japan, currently the only CITES-approved buyers, who have agreed not to re-export any ivory.

Some insist it's too soon to try reopening restricted trade in tusks and that, in any case, the elephants need a reprieve until highly threatened populations in some countries recover. But shutting off all legal flows ensures that pent-up demand can only be supplied by the black market. That will mean more, not less, poaching.

A strictly limited ivory sales system accessible only to countries with stable elephant populations could help underwrite a viable future for African elephants. It would be a powerful incentive to all range states to crack down on corruption and illegal killings and better protect their national herds. There was a lot at stake for elephants at this recent CITES meeting, and not many signs of bold thinking. Sadly, Africa will be left with even more elephant poaching, and growing piles of tusks that can't be sold. ●

John Frederick Walker

is the author of *IVORY'S GHOSTS: The White Gold of History and the Fate of Elephants*

P. O. Box 709

Kent, CT 06757 USA

(860) 927-3704

johnfrederickwalker.com



Dear SWARA,

While it was interesting to read your Executive Director's reflections on climate change and those of several other learned contributors in the January - March issue, I was somewhat concerned at the apparent lack of any comment



more will follow in the next decade to 2019, and a further 700 or more between 2020 and 2030, with over 50% in India and China. As a result CO₂ emissions can be expected to increase dramatically instead of decreasing.

Scientific evidence to date indicates that the world needs to reduce its CO₂ emissions by 70% between now and 2050. This is achievable because the developed world has the technology to do so. It is only a lack of understanding and confusion generated by special interest groups such as oil and coal magnates that stop the world from going forward. World trade and coal export revenues are also a major contributing factor to the lack of any meaningful progress.

On a broader scale, and one that we can all understand 70% of all people alive today will still be alive in 2050, and so climate change will ultimately affect almost every family on our planet. Back in 1961, there was still room to manoeuvre - global warming was merely a phrase no one took seriously. There were just 3 billion people using only half of the Earth's total resources.

However, by 1986 (a mere 25 years later) we reached a watershed - our population topped five billion and such was our collective thirst for resources, we were by then using ALL of earth's sustainable production. In effect, 1986 marked the

year that humans reached the Earth's carrying capacity, and ever since we have been existing on what might be termed the environmental equivalent of a deficit budget, made possible only by our plundering of the Earth's capital base (its natural resources) in the form of the over-exploitation of fisheries, overgrazing of all arable lands, destroying forests and polluting our wetlands, oceans and atmosphere.

By 2001, our population was over 6 billion and by 2050 it is expected to level out at around 9 billion, but the burden of human existence will be such that we will require not one but two planet's worth of resources. The greenhouse gases we produce in harvesting those resources will be the main limiting factor to human life.

Don Turner
A long time resident of Naivasha



Dear SWARA,
I read your review of 'Heaven and Earth' in the January-March 2010 issue with interest.

While I agree with Ian Plimer's premise that the global climate is in a constant state of flux, I was disappointed - yet again - that another author/expert/whatever concentrated totally on CO₂

pollution without a whisper about deforestation.

If man continues to pour his pollutants into the air in ever increasing quantities it probably won't kill us but, if he continues with his ever increasing rate of land clearing and deforestation at the same time, we'll soon be on our way out due to a lack of breathable air.

Ian McKenzie-Vincent
Author of *Hell Hath No Fury Like A Planet Scorned*
ivincent7751@gmail.com



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EAST AFRICAN WILD LIFE SOCIEY

P O Box 20110, Nairobi, 00200, Kenya
Offices: Riarua Rd (off Ngong Rd), Kilimani Nairobi.
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The Netherlands: EAWLS c/o Johan Elzenga, Stichting EAWLS Nederland, Ridderhoflaan 37, 2396 CJ Koudekerk a/d Rijn



Dear SWARA,

I would like to share with you the story of a young otter that has become an icon of conservation in the Democratic Republic of Congo (DRC).

On February 11, 2010, a young man named Mundweni was setting fishing lines in the swampy margins of the Wamba River. He heard a noise and waded through the muddy waters to an exposed tree stump. Suddenly, a large otter jumped out of the log, carrying a small, white pup in her mouth. Mundweni began to chase her, and in the frenzy, the otter dropped the pup. Mundweni caught up with the otter and, with one swift blow of his machete, the pursuit was over. He seized his kill by the tail and headed back to the tree stump. There he found the newborn pup, unable to swim and struggling to breathe in the murky water.

Tenderly, Mundweni lifted the defenceless babe and dried it off with his shirt. A few moments before, he had demonstrated the fearlessness and cold proficiency of a hunter desperate to feed his family. Now, he showed the gentle compassion of a warm and caring human touch. In the Congo, there is no incongruity between taking an animal's life to feed your family and rescuing an animal you just orphaned. Mundweni carried the dependent infant otter to the only people he knew would be able to care for it.

Glen and Rita Chapman are missionaries who have lived most of their lives in the DRC (formerly Zaire). They live in a small pastoral training centre called Kikongo, about 170 km east of Kinshasa, on the banks of the Wamba River in Bandundu Province. Rita has a special gift for raising wild orphans.

This was a first for Rita and Glen. Knowing that I had cared for an orphaned Congo Clawless Otter in 1995 in the heart of the Congo, they sent me a message: "Someone brought by today a dead female otter. It was definitely the clawless kind and matched all the descriptions. He also had an all-white, newborn baby. Eyes still closed, but very much alive." With these few words, we began a

journey together for African Otter conservation. The Congo Clawless Otter's (*Aonyx congicus*) range corresponds to the Congo river basin. It is one of the least-known otter species in the world. It has a patchy distribution across its range of occurrence, and a very low density of occupation where it is found.

This rare species is threatened by the escalating demand for bush meat and skins, habitat loss and degradation, a steep decline in fish populations due to over-fishing by humans with improved technology, pressure from the development of hydro-electric power projects, under-representation of otter habitat in protected areas, pollution and deterioration of water quality resulting from large-scale deforestation throughout their range, growing proliferation of weapons and munitions so that now otters can be shot from pirogues and river banks, as well as a dramatic depletion of other species (such as hippo) that play an integral role in the food chain on which otters depend and that contribute to the functioning of the aquatic-ecosystem that supports otter food supplies. The Congo Clawless Otter is the most terrestrial otter species in the world and is therefore much more vulnerable to snares set on land.

In the two months since Mundweni brought the pup to Rita, we have discovered many facts, previously unknown, about the Congo Clawless Otter thanks to generous, regular communications from Rita and Glen. The little pup is now known around the world as "Mazu" in deference to his persistent vocalizations, recognised in the world of otter husbandry as the "nursing hum." "Mazu" means, "noise" in the



Above: Mazu, the otter pup, meets some children.

Picture by: Glen Chapman, Kikongo

tribal Kikongo language. Mazu has united the interests of people around the world and in his home village. Under Glen's educational guidance and thanks to his efforts to inform many villages near and far from Kikongo, Mazu has become a symbol of the Congolese natural heritage, and a global treasure. Through the efforts of the International Otter Survival Fund (IOSF), Mazu has been introduced to the global stage and has become an unparalleled ambassador for African Otter conservation.

It would be inappropriate to release him back into the wild. Congolese do not have the experience to distinguish between wild animals and tamed wild animals when they are hunting for food to feed their families. So, with the support of a group of caring individuals and organisations, Glen will provide a safe and stimulating enclosure to meet Mazu's growing needs, Rita will continue to provide the care under which Mazu thrives, the local community will reap the benefits of global attention and Mazu will continue to teach us all. ●

Jo Thompson, PhD,
Lukuru Wildlife Research Project,
Democratic Republic of Congo

You can follow the story of Mazu by regularly checking the IOSF website at <http://www.otter.org/IOSFBlog.aspx>



I would personally like to welcome the following members to the East African Wild Life Society:

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Paying for our forests – the opportunities and the risks

BY FREDRICK OWINO

Since the 1992 Rio Earth negotiations (United Nations Conference on Environment and Development - UNCED), countries all over the world have paid more attention to deriving tangible economic benefits from environmental services provided by their forests and other natural resources. The “polluter pays” principle was the mantra at Rio and took strong roots in UNCED's Agenda 21.

Since then, there has been a flurry of global, regional and national reviews of the mechanisms for payments for ecosystem services (PES). In eastern and southern Africa, there have been few studies and relatively little action on how to derive benefits from PES. Notable efforts in this direction have included the initiative by the United Nations Economic Commission for Africa (UNECA) to develop a common framework for valuation of environmental services and their integration into national accounting systems.

One area of great concern to countries is water use by plantations and trees outside forests. Policy-makers are re-assessing forest plantations and other forms of tree growth to take into account water availability and future projections. Some countries may soon place restrictions on the development of new plantations because of water use concerns (this has already happened in South Africa). There are big policy issues to be resolved if this happens elsewhere, including promotion and support of tree-growing in agroforestry, increasing

production from natural forests and forest product substitution.

PES schemes reward people through subsidies, or market payments from other people who benefit from services such as water quality, carbon sequestration, biodiversity and flood control by wetlands. These schemes generally seek to create incentives for land managers rather than to criminalise their undesirable actions through legislation. The key innovation that distinguishes PES from other incentive-based approaches is that there is a contract between the user (buyer) of the ecosystem service and the supplier.

A comprehensive study of PES schemes has been carried out by the Economic Research Bureau at the University of Dar es Salaam in Tanzania. The study aimed at establishing a mechanism for Payment for Water Environmental Services (PWES) in Tanzania using the Eastern Arc Mountain Forests and the Rufiji Basin as a whole as the basis for this work. The overall goal of developing PWES is to supplement efforts by forest and water resource managers through stakeholder participation of all those who use the ecological services of the forest and those who manage the forest catchment areas, as well as the riverbanks and other water sources. The aim is to ensure a sustainable flow of hydrological services by mobilising financial resources for their management, based on the benefits they generate.

The study's main conclusions included the following points:



> Chairman's Letter

Payments for ecosystem services (PES) schemes reward people through subsidies or market payments derived from other people who benefit from services such as water quality, carbon sequestration, biodiversity and flood control by wetlands.

- In order for the PWES implementation to be successful, stakeholders in integrated water resources management and utilisation must be sensitised and made aware of the issues;
- The system of payment for, and management of, water environmental services should be more transparent;
- The success of PWES in the Rufiji Basin and other basins in the country depends on accommodating the necessary adjustments to the existing institutional structure and regulations.

Other countries are also exploring benefits from PES. For example, in Kenya, PES arrangements are already being piloted for water supply to the capital city, Nairobi. Such arrangements are soon to be extended to other Kenyan water towers. As in the case of Rufiji River, Kenya is grappling with the necessary policy and institutional changes in the water, forest, energy and environment sectors.

East African countries share great concern over dire predictions regarding the impact of climate change, and have participated in global and regional negotiations about what action to take. Some countries have

developed national and local strategies and plans to address the consequences. Still, there are big knowledge gaps and policy issues to be resolved in order to mitigate and adapt to climate change. Already, Britain's Department for International Development (DfID) and the Canadian International Development Research Centre (IDRC) are supporting the Climate Change Adaptation in Africa (CCAA) programme, which was set up to improve research on climate change adaptation in a range of African settings. A number of action research projects have been funded and more are under consideration. CCAA aims to facilitate interactions between African scientists, researchers and policy-makers around climate change issues.

Carbon forestry is already being piloted in several countries, including Tanzania, Mozambique, Uganda and Kenya. While there remain many technical issues to be resolved around forest/tree carbon capture and its measurement and trading, several countries already have carbon-trading projects. However, there are important policy issues to be addressed, including:

- The competing needs of large and long-term concessions for carbon capture, and

- agriculture and forestry production;
- Restriction of access (for grazing and livelihood extraction) to land set aside for carbon capture;
- Ensuring that the proceeds from carbon trading actually supports sustainable forest management - SFM.

These policy issues should be fully addressed as countries embrace carbon forestry projects. Moreover, countries need to address broader policy issues for PES. More research is needed into whether, and under what circumstances, PES will be able to compensate fully for the loss of alternative land uses.

Political leaders in most countries are already highly sensitised to global concerns over deforestation and climate change. Actions on forests are in the political limelight. This presents both great opportunities and risks for public forest administrations and forest managers. Opportunities include possible mobilisation of population and financial resources, facilitation of policy and legislation reviews, and improved forest governance. The great risk is possible political interference in public forest administration. Countries should take full advantage of the current high levels of interest to formulate robust policies and legislation while forests and forestry enjoy the limelight. ●

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Further reflections on the Mara situation

BY NIGEL HUNTER

My last letter ended with the following text about the Maasai Mara situation, which continues to capture the attention of the media: "This is a classic tale of the killing the goose that lays the golden egg, and it cannot be blamed on climate change. Most management - planning practitioners would agree that protected areas should have regard to zoning, and take into account tourist carrying capacities, quality of the experience, respect for tourist management regulations, habitat management, wildlife movements and breeding cycles, and keep appropriate development as much as possible on the boundaries of the protected area. Yet again, it appears that greed, corruption, lack of attention to the management plan and putting individual interests ahead of national interests have prevailed."

I recently came across a letter written in August 2008 by the minister of tourism to the chairman of Narok County Council with regard to Camping Site LR No. 27424 at Olkeju Ronkai. The letter asks Narok Council to allow this development to proceed, arguing two main points.

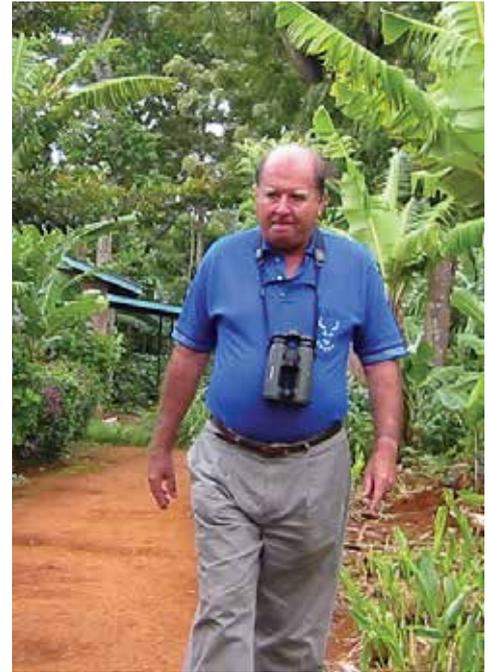
First, it says that when a memorandum of understanding was agreed between the two local authorities and the Ministry of Tourism to suspend approval of new tourism developments in the Mara until a management plan was in place, it was agreed that this would not apply to approvals already granted. The letter says the ministry raised no objections in March 2007 to an Environmental Impact Assessment (EIA) of the proposed camping site, and that this was followed by the approval of a National Environment Management

Authority (NEMA) licence (No. 0001504), issued in February 2008.

The flaw in this argument is that it is based on the assumption that the EIA procedure and NEMA licence approval process were above reproach. The reality is that no EIA was actually undertaken. The EIA submitted was one carried out for a development in Samburu, with some place names changed. The proof includes the fact that the animals listed as occurring in the Mara included such species as Grevy's zebra. A recent audit of NEMA also showed that the issue of licences was not beyond reproach, and some were even granted despite a recommendation not to issue.

So an approval has been granted, but is the Ministry of Tourism saying that no consideration should be given to whether the process was transparent, objective and without any conflict of interest or corrupt influence? Having read the EIA from Samburu, I have to also ask whether the ministry's 'no objection' to the study met the criteria provided above as regards protected area tourism development.

"This Ministry upholds the importance of environmental conservation for sustainable tourism development, and recognises the importance of area management plans to guide overall sector development. It is imperative, however, that we do not, at the same time, frustrate investors due to lack of local coordination. If it was agreed that investments approved prior to the signing of the MoU should proceed, let us not frustrate investors by changing goal posts. As a government, we are expected to open investment opportunities

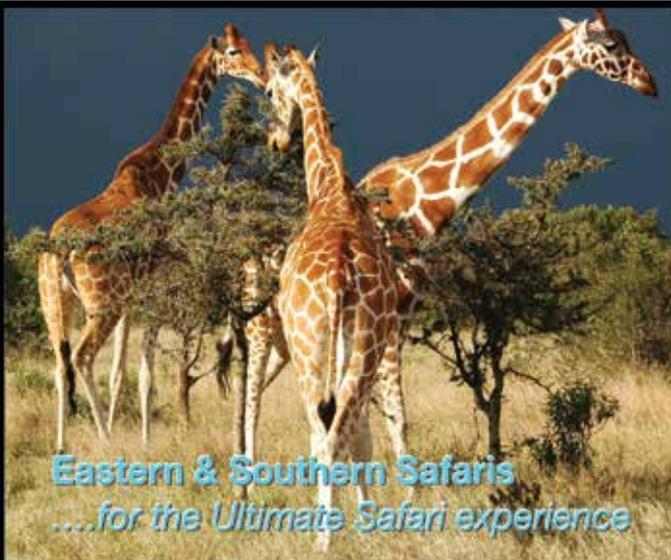


to all investors, both local and foreign without discrimination."

The contradictions inherent in this part of the letter are fascinating. One of the main arguments against mushrooming development in the Mara is that it is not sustainable, exceeds tourist carrying capacity, will have significant economic consequences and will greatly diminish the value of investments already made. In other words, the request to allow this development to go ahead negates principles of sustainability, of having no environmental degradation and the need to have a management plan to guide investment and development. If the Mara goose that lays the golden egg is dying, then perhaps the Ministry of Tourism can explain how this will help investment in Kenya?

Another contradiction lies in the warning against a lack of coordination. Why then is there apparently no coordination with other relevant government agencies and with private sector forums responsible for assisting with tourism development and management under the public/private sector join-up policy? ●

Nigel Hunter
Executive Director
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Do animal “orphans” help wildlife conservation or add to species decline?

BY DR.STEPHANIE DLONIAK

Through the programme, a person can sponsor any of the individual animals that are resident at the orphanage or give a donation to be used at the discretion of the KWS.

The Kenya Wildlife Service (KWS) recently launched a new fund-raising campaign, entitled “The Namayiana Wildlife Adoption Programme.” According to the KWS website, this programme has been developed to “enable the Nairobi Animal Orphanage (NAO) {to} raise adequate funds to be used to provide medical, emotional and psychological care to animals as well as providing humanity {with} the opportunity to take part in owning and caring for wildlife.”

Through the programme, a person can sponsor any of

Above:
Mother cheetah and cubs.

Pictures by:
SWARA library

the individual animals that are resident at the orphanage or give a donation to be used at the discretion of the KWS. Half of each donation will be used to support the upkeep of animals at the orphanage, and half will be “directed to the KWS Trust Fund, whose objective is to provide a sustainable source for funding wildlife conservation and its habitats.”

The programme was officially launched on November 2 by Kenya’s Prime Minister, Raila Odinga, with many other dignitaries and personalities also attending. The function drew a great deal of local and international media attention due mainly to the presence of world-record sprinter Usain Bolt. During his visit to Kenya with the Zeitz Foundation, Mr. Bolt “adopted” a cheetah cub, and pictures of Mr. Bolt holding and feeding this cub at KWS headquarters

appeared in news outlets around the world. KWS should certainly be applauded for establishing the new trust fund, and their efforts to support management of wildlife throughout the country deserve praise.

However, while on the surface raising funds through the adoption of “orphans” living at the NAO may seem a good idea, this strategy could, in fact, have dire consequences for certain species. Having orphanages does not lead to a decline in the number of wild animals that are judged to be orphans. In fact, according to KWS, in recent years the number of “orphans” brought to the NAO has been on the increase. The presence of an orphanage in an area may actually inadvertently promote the removal of more animals from the wild.

This is especially true for a species like the cheetah, the flagship face of the adoption



The truth is that, regardless of why they are “rescued,” none of these animals will be reintroduced to the wild, and the act of removing a wild animal from natural habitat to captivity is usually fundamentally detrimental to species conservation.

programme. Very young cheetahs are routinely left behind by their mothers during hunting expeditions and other activities, sometimes for a number of days. Well-meaning but uninformed people assume that such cubs have been abandoned, and “rescue” them. Cheetahs are relatively rare and declining in many areas, thus there is a rationale that someone should “save” every individual, because the thought is that every individual must count towards the conservation of the species. Unlike a young rhino or elephant, a cheetah cub is very easy to collect and house, thus there is little to deter its removal from natural habitat.

This may seem harmless, but it can actually have very negative consequences. The truth is that, regardless of why they are “rescued,” none of these animals will be reintroduced to the wild, and the act of removing a wild animal from natural habitat to captivity is usually fundamentally detrimental to species conservation. Images of people cuddling and caring for animals

that were formerly wild also often inspire even more people to disrespect and attempt to cuddle wildlife, and, unfortunately, some not-so-well-meaning people also remove cheetah cubs from the wild. These cubs then become a part of the illegal wildlife trade. “Trade”, in a broad sense, includes not only commercial exchanges but also any other ways in which live animals may be obtained for use as pets, placement in private zoos, or other purposes: this includes “rescued” animals.

While the illegal trade in cheetahs (and other carnivores) is very difficult to document and regulate, we certainly know it exists. Ultimately, the exploitation of a rare and endangered species can end in the species’ extinction because the increased value people associate with rarity increases the economic incentive to exploit the last individuals, creating a positive feedback loop (sometimes called the “anthropogenic Allee effect”).

Thus it does not seem wise to focus attention on the plight of captive carnivores and images of people interacting with them when the ultimate goal is the conservation of free-ranging wildlife, including ecologically functional populations of wild carnivores. Although the former strategy may satisfy some emotional need to participate in “animal welfare” cases, and let some people feel like they are owning and caring for wildlife, we must also remember that species conservation should take precedence over any individual animal’s welfare.

While the new adoption programme may indeed raise some funds for wildlife management, the potential costs to wild carnivores could far outweigh any benefits. As



Above: Usain Bolt cuddling an adopted cheetah at launch of the adoption programme.

Below Left: Cheetah cub in an orphanage.

an alternative, I suggest a cue be taken from Vladimir Putin, the prime minister of the Russian Federation. Instead of sponsoring a captive tiger, Mr. Putin has shown his support for the conservation of Russia’s wild tiger population by “adopting” a free-ranging Amur tiger. Mr. Putin assisted biologists from the Russian Academy of Sciences with the immobilisation of a wild tiger that was subsequently fitted with a radio-collar and released.

The whereabouts of “Putin’s tigress” can be tracked on the project’s website, drawing attention from all over the world to the activities of wild tigers in the Russian Far East: attention that is focused on wild animals and science-based wildlife management, not captive animals and welfare cases. ●

DR.STEPHANIE DLONIAK is a wildlife biologist based in Nairobi. She is an Adjunct Assistant Professor of Zoology at Michigan State University, USA, a member of the IUCN Hyaena Specialist Group, and a member of the Kenya Wildlife Service Large Carnivore Task Force.





The Aberdare

Could its
management
plan work
elsewhere?



In Kenya, much work has been done to raise awareness about the fact that we face a very difficult set of forest management options – none of them easy.

BY COLIN CHURCH

Forests in tropical Africa carry a much greater burden of climatic responsibility than those in the world's temperate zones. Indeed, this reality embraces the tropical waistline of the entire world.

Temperate zone economies have either cut down forests or, in areas where they are so vast and take so long to re-grow, treated them as resource centres for the unlimited and 'sustainable' extraction of timber. In both cases, these forests do not affect climate as dramatically as those in the tropics.

Perceptions die hard. Since developed economies have entrenched attitudes to forests, the understanding of tropical belt forests – mountain and lowland – has incorporated the same attitudes for the past 100 years.

Such attitudes are at the heart of a catastrophic problem in 21st century Africa.

People need to be educated about different kinds of forests. Forest authorities continue to consider indigenous forests as centres of extraction, instead of focusing their considerable knowledge and energy on extension work with farmers, primarily to develop sustainable wood lots on farm land.

The challenge for African governments is to turn indigenous mountains' 'forest value' on its head. Put in simple terms - store indigenous trees in precious water catchment forest highlands. Do not cut them.

To reach this mindset requires those living near, and in various ways 'living off', indigenous forests to believe storage is better than

Above: Kinankop-tea hill with tea plantations on one side and the Aberdares wilderness beyond.

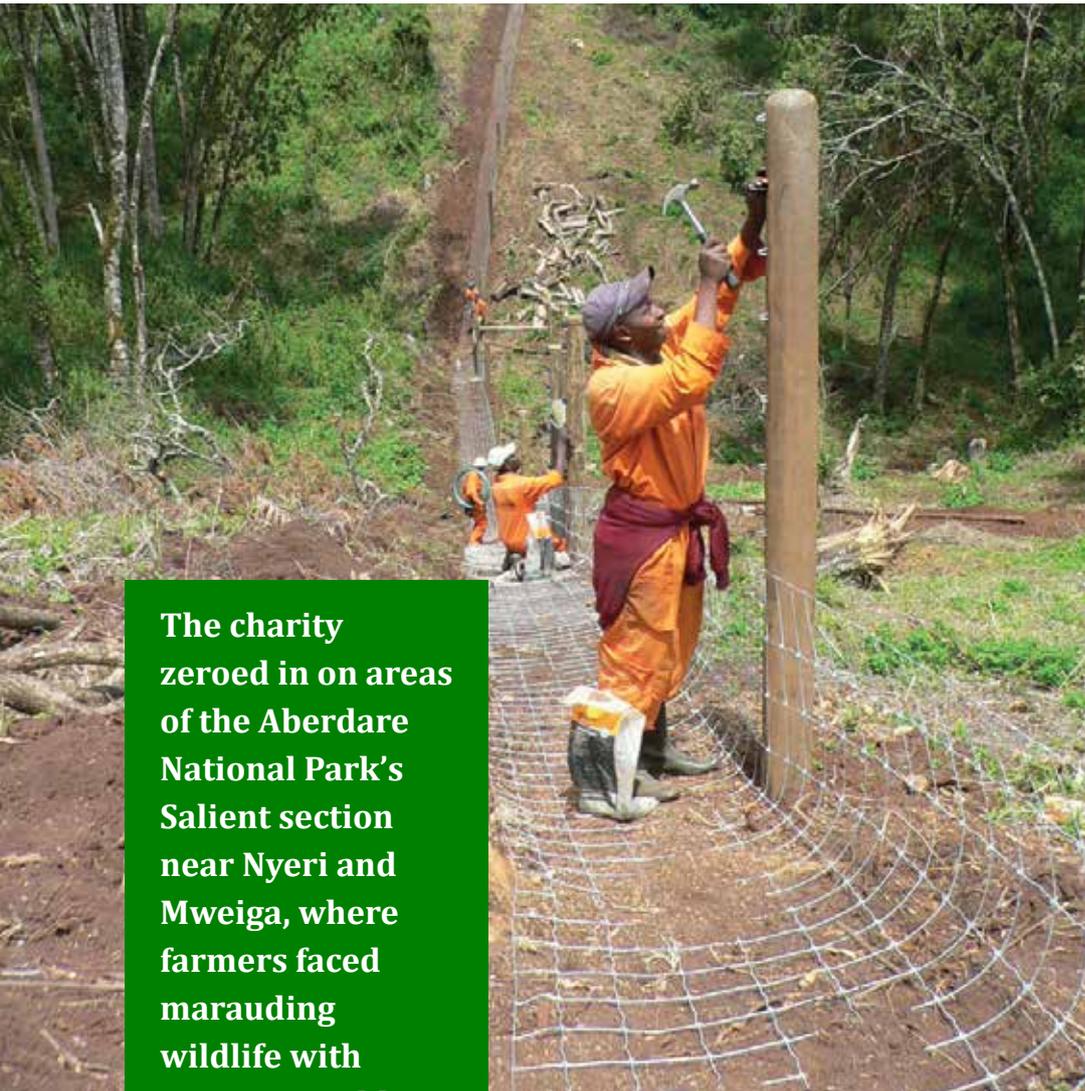
Pictures by: Rhino Ark

liberal extraction. But with more and more people forced to 'use it to live', things are at a breaking point in many highly stressed mountain forest zones.

In Kenya, much work has been done to raise awareness about the fact that we face a very difficult set of forest management options – none of them easy.

So could the experience of the Aberdares – certainly the most stable mountain forest system in Kenya today - be applied to other forests? If so, what has driven this effort and what are the secrets of its success?

The Aberdare range plays a pivotal role in the complex geo-physical mix and climatic conditions on the east side of the Great Rift Valley in Central Kenya. It is one of many ranges formed from the upheavals following the



The charity zeroed in on areas of the Aberdare National Park's Salient section near Nyeri and Mweiga, where farmers faced marauding wildlife with an unstoppable desire to eat their hard-worked crops.

formation of the Gregorian and Albertine rift valleys millennia ago.

Within the Aberdares' mass of sweeping valleys and peaking ridges covered with an outstanding variety of indigenous trees, shrubs, and flora, lies one of Kenya's most precious ecosystems. Marked by great sweeps of high moorland and craggy peaks (up to 4000, metres above sea level), this area is the fountainhead of a huge number of streams and rivers which flow north, east, south and west, providing essential water supplies to a vast area of Kenya. About one in three Kenyans is dependent, in some way, on the

Above: Putting up the Aberdares fence.

rivers, forests, flora, fauna and climatic impact on rainfall patterns that this almost 160 km-long range provides.

Its fertile soils enable millions of farmers to secure a living from a valuable variety of food and commodity products. Its wildlife and unique habitat are one of the country's prime tourist attractions, bringing further jobs and benefits to thousands of people.

So were these the issues foremost in the minds of those who founded Rhino Ark, 21 years ago? The charity raised funds and built a trusted relationship with the government, creating a partnership that resulted in a stable forest ecosystem – 2000 km² of pristine forest and moorland.

Did the Rhino Ark's founders consider how best to ensure the Aberdares benefited from

sound conservation initiatives to protect the area and ultimately allow a sustainable level of resource extraction from its rich biodiversity?

To a degree, yes. But only in the context of the human and wildlife pressures for resources that manifested themselves along the boundary between forest and farm land. The charity zeroed in on areas of the Aberdare National Park's Salient section near Nyeri and Mweiga, where farmers faced marauding wildlife eager to eat their crops.

In the Salient, this conflict was fierce, and destructive to farm incomes. It even cost farmers' lives. It put at risk the huge benefits wildlife was providing to the tourist industry through the renowned Treetops and Ark Lodges. It is often forgotten that Treetops, when it was first started 78 years ago in 1932, was the first tourist lodge in Kenya. Today, 21 percent of Kenya's foreign exchange earnings and 12 percent of its gross domestic product is derived from tourism.

Something had to be done and money had to be found to resolve the human-wildlife conflict. Previously, different systems had been tried, including a game moat which proved very expensive to maintain, was easily breached and inefficient.

An electrified fence was considered the best, swiftest option. The Salient area became the focus of attention as, in addition to crop destruction by wildlife, the resource value of wildlife was creating jobs for the same farmers who were losing crops.

So the early initiatives were entirely community-driven. Fence-edge communities began to understand the true value of the forest, which helped stabilise rainfall and river outflow, and see it as a heartland for the valuable water, wildlife and flora inside the proposed fence.

The fence is no ordinary one. It was carefully designed by Rhino Ark's founder and engineer, Ken Kuhle, so that it was not only electrified with impulse currents to a height of seven feet above the ground but also implanted



The Salient area became the focus of attention as, in addition to crop destruction by wildlife, the resource value of wildlife was bringing employment to the same farmers who were losing crops.

three feet below the ground, using tight-lock meshing wire to prevent wildlife from burrowing underneath. Slowly at first, the donations trickled in. The pace has accelerated in recent years as the funding drive caught national and international attention. The fence was completed slowly, first in the Salient and then it began to weave its way around 400 km of rugged mountain hillsides.

Several forces came into play as the fence-line communities, with their competing interests, began to wake up to the benefits. Forest- and national park-edge farmers were securing 100 percent crop offtake. Land values rose by up to 300 percent in some areas. Farmers could sleep peacefully at night, there were no more deaths from attacks by wild animals and children could walk safely to

school. These were all very simple benefits but when added together, they resulted in a huge change in lifestyle and incomes.

In the longterm, these changes outweighed the unsustainable benefits gained from dead wood offtake, logging and poaching. Human nature is such that these negative activities never cease immediately, or totally. They continue today. But the success of the fence in resolving human-wildlife conflict has dramatically reduced the motivation for unsustainable 'extractions' of forest products.

For the past 20 years, we have been in an interim period – forest-edge farmers' benefits are real and flora and fauna are better secured.

As the fence gradually snaked around the vast mountain range, community after community

Above:
Good fences making good neighbours.

woke up to the benefits and experienced them first-hand. During this process, demand from communities living without a fence rose sharply.

But the money to build the fence was still only coming from the wider tax-paying society, who suddenly realised that a dramatic change was happening. One of Kenya's precious 'water towers' was being secured and made safe from land-grabbers – all too often business interests in cahoots with unscrupulous civil servants and politicians, the very people charged with upholding forest and park values.

So the farmers began to take part in building the fence, to speed it on its way to their shambas. Rhino Ark encouraged people to volunteer to help as part of the buy-in process. Communities began to realise that this was their fence and their problem to solve, rather than leaving it to the government, whose track record on forest border integrity was under pressure. Rhino Ark had to fight attempts by vested interests to alter the fence-line



The Kenya Wildlife Service and Kenya Forest Service, the state agencies charged with the management of the forest and park, now have a more defined area to run.

and turn a blind eye to various excisions. Efforts to consider areas of old coniferous plantations, deep inside the 'water catchment' zones, for excision treatment were challenged and their promoters eventually silenced.

The fence helped farmers understand that land inside the barrier was state land. So those managing the forest and

Above: Rhino living free and safe within the fenced boundary.

national park found themselves with a valued management tool, in which the communities had a vested interest. Even more telling, the wider society in Kenya demonstrated its interest in the Aberdares' fence by raising over Ksh 750 million (nearly \$10 million), mainly through a truly Kenyan event, the Rhino Charge. The off-road endurance event

was dreamed up by the founders of the Rhino Ark fund as a novel, and soon to become hugely popular, way to raise the money needed to build the fence. Every one of the limited number of entrants have to pledge a significant sum towards the Rhino Ark in order to compete. The race is full every year.

The Kenya Wildlife Service and Kenya Forest Service, state agencies charged with the management of the forest and national park, now have a more defined area to run. The cost-benefits soon became evident. People had to enter the Aberdares National Park through access gates, rather than sneaking in at random points to cut trees for charcoal. The fence became a cost asset.

Rhino Ark's outreach as a successful body making a tangible difference to ecosystem integrity and poverty eradication has been well recorded. It is regarded internationally as one of Kenya's most specifically focused conservation activities, one that makes a difference from the bottom up.

What are the secrets of the plan's achievements? First, the project is community-driven. Forest-edge farmers see that the fence keeps wildlife away from crops and shows clearly what belongs to the state - indeed all



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Left:
The fence, and a river runs through it.

The Forest Act 2005 and the Wildlife Act give management agencies KWS and KFS a mandate to ensure proper policies are put in place for all non-exploitative activity. Much will depend on the maintenance and management of the Rhino Ark Aberdare Fence. The boards of the KFS and KWS have approved the creation of a Trust, to include Rhino Ark and the fence-line communities. It would be formed as a public-private partnership (PPP) and would be empowered to run the fence. It would also help to develop a holistic master plan for the entire ecosystem. Water extraction, indigenous forest replanting in historically damaged and logged - out areas, leisure, tourism, flora-based extractions and cultural pursuits – all based upon the premise of non-exploitative but sustainable development- will be addressed by the Trust.

A PPP requires equal funding from private and state sources. The Kenyan Treasury has begun this process, and by matching what Rhino Ark has raised by way of an endowment fund, it could garner enough annual interest revenue to cover the core costs of the fence. But the Trust will have a vibrant public face and could also benefit from further special project support funds, such as carbon offsets, endangered species special projects funding and research grants - indeed anything that seeks to secure the mountain ecosystem for the benefit of the millions who depend upon it.

The Aberdares is a vibrant model which offers millions living near, or off, threatened mountain ecosystems encouragement and hope for their future.●

Communities began to realise that this was their fence and their problem to solve – rather than leaving it to the government, whose track record on forest border integrity was under pressure.

taxpayers – on the other side. This management tool has totally stopped encroachment and land-grabbing – problems that bedevil other similar mountain forests. In the Aberdares, the original threat - crop destruction by wild animals - became a key selling-point to communities.

Other forest systems have precious flora and fauna and, even if there are fewer elephants and other crop-eating animals, the importance of creating a barrier so that all know what they own and what belongs to all Kenyans is a

necessary requirement in today's society.

Secondly, the fence alignment was professionally planned, taking into consideration the need to cater to all aspects of forest (indigenous and potentially commercial) management and to create a clear demarcation for non-exploitative use of forest products. People realised that forest-edge, community-based activities and the equally necessary needs of national and international conservation practices can exist harmoniously, side-by-side.

COLIN CHURCH is chairman of the management committee of Rhino Ark. A former journalist, radio commentator and public relations guru, he was president of the global professional PR body, the International Public Relations Association in 1996, and co-authored IPRA's charter for environmental corporate practice in 1991. He was a founder member and past chairman of the Public Relations Society of Kenya.



Serengeti

A collaborative approach to conservation

BY LAURA HARTSTONE

Conservation forums have been around for decades. But the one hoping to promote conservation in the Serengeti, one of the last intact ecosystems in the world, is not run along the usual lines.

The constitution of the Serengeti Ecosystem Community Conservation Forum (SECCF) “recognises the interrelated nature of air, land, water and all living beings. Rather than geopolitical boundaries and departmental

Below: The migration crossing the southern plains of the Serengeti.

Pictures by: Laura Hartstone

divisions, this approach calls for creative partnerships that look at natural boundaries, such as watersheds and patterns, as the unit of management.”

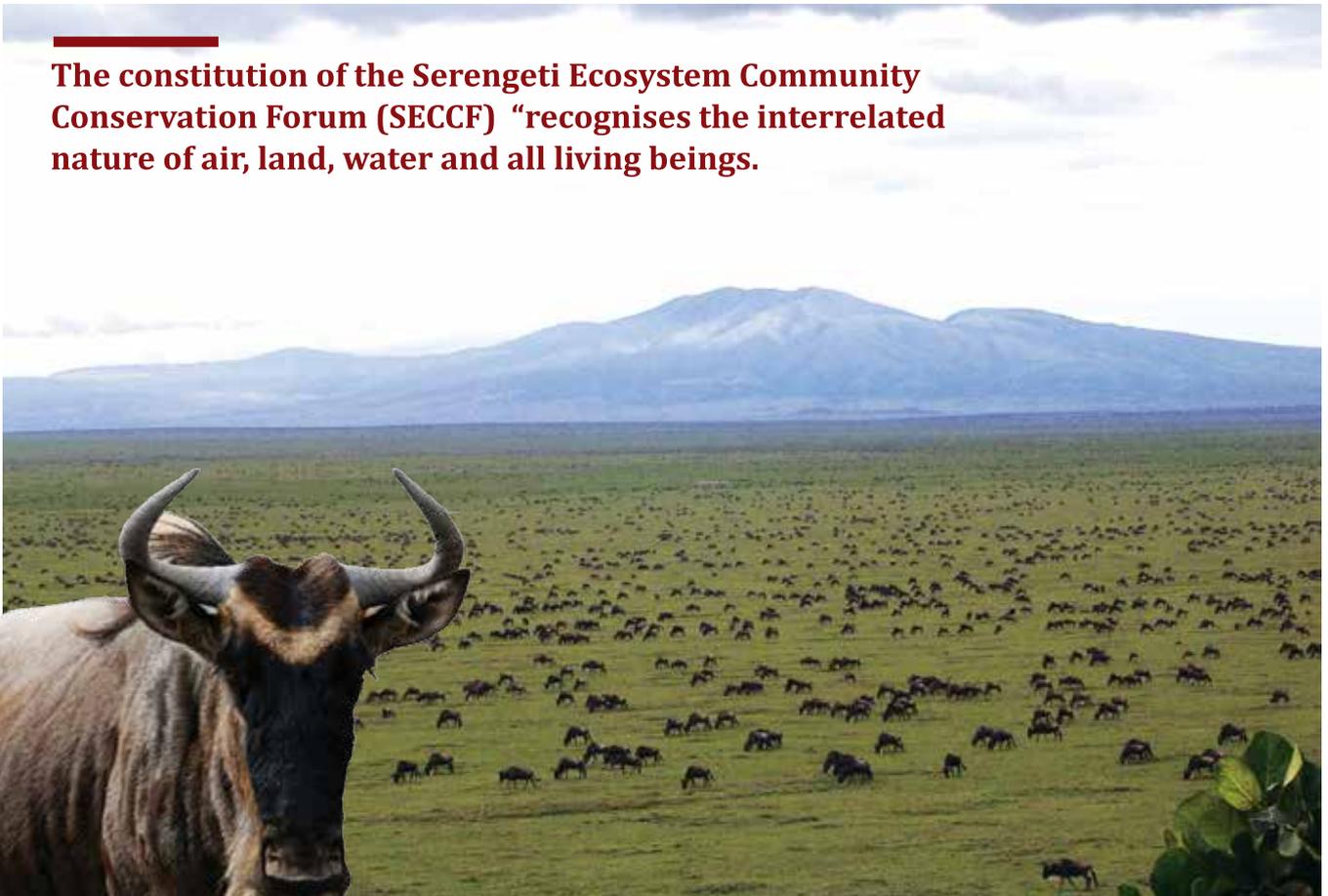
SECCF was established in July 2007 to foster collaboration and communication among all stakeholders within the Serengeti ecosystem. The demand for such a platform has increased over the years as more organisations have begun working in the area and as populations in nearby villages

have grown. A bird's-eye view of the Serengeti ecosystem would display endless acres of untouched landscapes dotted with volcanoes, rivers and woodlands. It would show an area teeming with wildlife and bordered by villages filled with farms and people. It reaches beyond the borders of the Serengeti National Park. It encompasses approximately 27,000 km² of wild land, villages and animal corridors.

In these areas more entities than just the government have an influence. Hunting companies, tour operators, researchers, educational institutions and non-governmental organisations (NGOs) all play a variety of roles from key decision-making to integrating new regulations for the area.

Furthermore, many of these larger groups help represent those groups and areas that do not have a direct say in decisions made in the ecosystem. Some of these include local villagers who must speak to their local governments, wildlife, which is represented by a

The constitution of the Serengeti Ecosystem Community Conservation Forum (SECCF) “recognises the interrelated nature of air, land, water and all living beings.





variety of organisations, and virgin land that is governed by various laws and management plans.

Apart from the National Park, the Ngorongoro Conservation Area makes up 8,288 km² of the ecosystem, along with other Wildlife Management Areas, Game Controlled Areas and village lands – all of which fall under their own land-use management schemes. Little interaction between all of these entities led to the demand for the Forum. Government influence is complicated as it incorporates local and district leadership coupled with country-wide regulations. Various ministries often play a role and heads of state involved are sometimes stationed in faraway regions, making it difficult to unite all groups.

Eight districts – all with their own ideals – make up the ecosystem: Bariadi, Bunda, Karatu, Magu, Meatu, Ngorongoro, Serengeti, and Tarime. Each of these districts falls within three regions: Shinyanga, Arusha and Mara. Not only do these regions and districts have their own governmental representation, but many have very different cultures and ways of using land.

The enormity of the ecosystem and its many stakeholders has added a massive challenge to managing the area. Hoping to



address the need for collaboration at the ecosystem level, Frankfurt Zoological Society (FZS) stepped in to initiate the Forum. It wanted to create an institution that could help further conservation efforts in the region by allowing communication between various stakeholders.

Driven by their Serengeti Ecosystem Management Project (SEMP), FZS used its expertise

Above: An initial meeting of the Serengeti Ecosystem Community Conservation Forum (SECCF).

Below: Giraffe silhouettes in the Serengeti.

both inside and outside the National Park to create the Forum. In 2005, the first steps were taken to develop the idea for a forum that would incorporate stakeholders as “members”. The use of membership would not only hold all stakeholders accountable for participation, but it would create equality between all members.

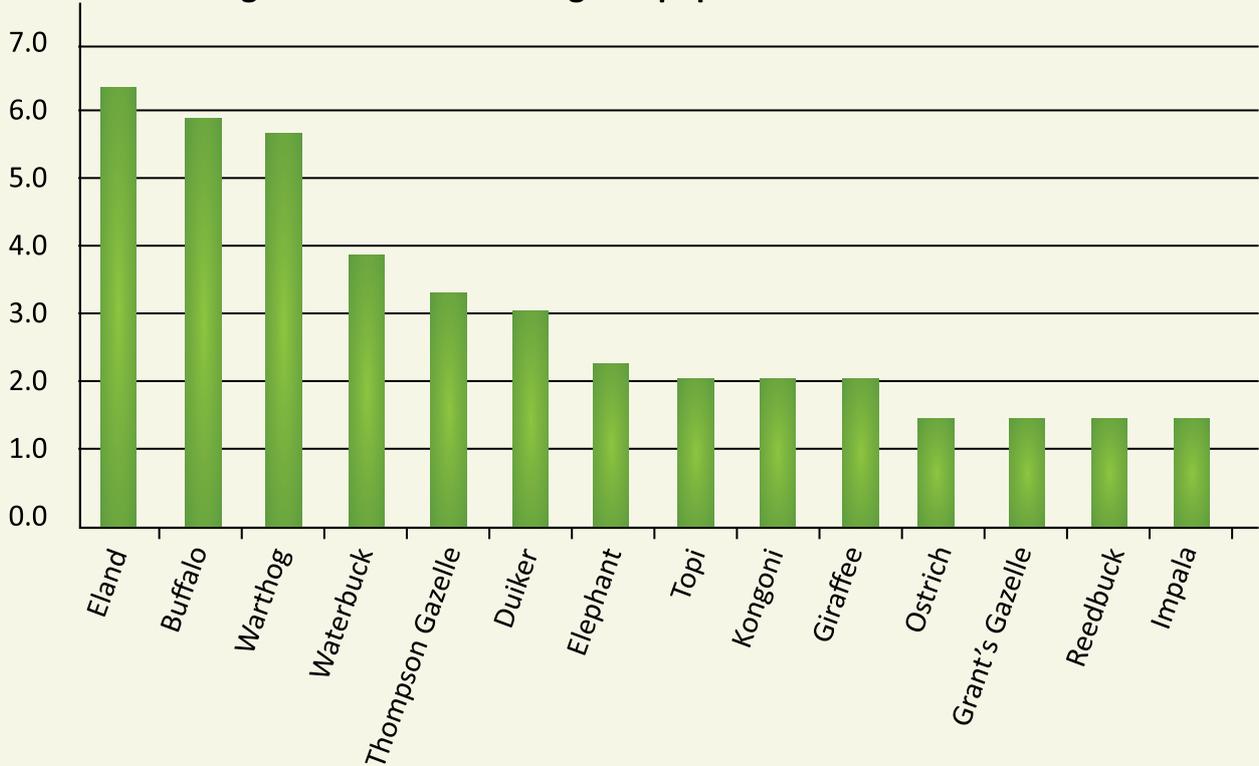
Funding was crucial in the beginning and provided by the European Union. The initial monies were used to bring members together. Uniting all of the stakeholders seemed a monumental task but it was understood that the success of the Forum was depended on the participation of all involved.

The first meetings discussed the organisational structure of the Forum. In an effort to maintain equality amongst all members, a motion





Magnitude in increase of game populations from 2003 to 2009



The SECCF has been established to address issues concerning anti-poaching, research, community projects and involvement, conservation education, policy, and several other topics.

was made to establish the Forum as its own entity. During one of the initial meetings a resolution was passed to make the Forum a registered non-profit organization of Tanzania. As a non-profit, the Forum could begin fundraising on its own and become a more sustainable voice for the entire ecosystem.

After much hard work and planning, non-profit status was acquired in September 2009 giving the Forum an encouraging and empowered beginning. A Steering Committee, comprised of a variety of members, helps regulate and control decision-making. FZS acts as a member of the Secretariat but otherwise allows SECCF to mature with its own voice and authority.

Though other conservation forums exist worldwide, they are typically much smaller in scale. The Serengeti Ecosystem Community Conservation Forum, though new to the game as of July 2007, has made huge steps in bolstering efforts in conservation by advancing principles of ecosystem management and stewardship of natural resources. Remarkably, 26 stakeholders have joined the Forum representing civil society, private sector,

non-governmental organisations, and government institutions. This approach widens the ideals and motives of the Forum but allows it to be driven by sustainable conservation initiatives that benefit natural resources and communities.

SECCF has been established to address issues concerning anti-poaching, research, community projects and involvement, conservation education, policy, and several other topics. Collaboration for current issues including conflict resolution is under way and communications regarding various project updates across the ecosystem have been reflected upon at meetings. Each member is expected to inform the others of their undertakings; thus, members will be able to further efforts in the area without repeating mistakes

and overlapping projects.

This type of collaboration was unheard of prior to SECCF, and has become a well-supported idea. The Forum has already begun to serve as a catalyst for combining resources and ideas from various economic, human development and conservation interests. Not only does the future of the Forum rely greatly on the inclusion and active participation of all its members, but the future of the Serengeti Ecosystem will depend on its success. ●

LAURA HARTSTONE

A former U.S. Park Ranger, Laura now spends much of her time in the Serengeti and writes and photographs for international publications.

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Working with the Maasai to stem lion killing and save wildlife

BY RUFUS CAMM



The Mbirikani Group Ranch, an area of 300,000 acres at the foot of the Chyulu Hills, is nestled between Tsavo and Amboseli National Parks with a stunning backdrop of Kilimanjaro to the south. It is one of Kenya's best wildlife viewing areas, thanks to the Maasai who are tolerating wildlife on their land. Over 20 years ago, when Richard Bonham first decided to build a tourist lodge in the Chyulus, you would have been lucky to see an elephant

Serious difficulties arose from late 2001 to early 2003 when 22 lions were recorded killed on the Mbirikani Group Ranch by poisoning and spearing.

Above:
Lion speared by the maasai.

Pictures by:
Gwili Gibbon

footprint. Now, many elephants safely roam the plains and forests, along with the Big Five. And one of the safest lion populations in Kenya, outside parks and reserves, now roams here too.

A luxury 22-bed lodge, called Ol Donyo Wuas, is a favourite spot for guests who are prepared to pay to stay in this wilderness area, far away from other tourists. Profits from tourism, channelled through the Maasai Preservation Trust set up by Richard Bonham and the Maasai, have been supporting the Maasai in the area through education, healthcare, water management and reforestation. The Maasai in turn have been allowing the wildlife to thrive, now that they see it as an asset. Serious difficulties arose, however,

from late 2001 to early 2003 when 22 lions were recorded killed on the Mbirikani Group Ranch by poisoning and spearing. It was thought unlikely that lions would survive for much longer, despite this area being prime lion habitat. In 2003, the Trust and Ol Donyo Wuas started a new scheme called the Predator Compensation Fund. As the name suggests, if predators killed livestock, the Maasai were to be paid compensation for their losses.

Since that date there has been a miraculous turnaround with only four lions killed by Maasai. Significant sums of money must be raised annually for this Fund, but it is enabling predators in the ecosystem to survive in an area which includes an important migratory route for animals between Tsavo and Amboseli. The tourists themselves are aware that they are directly supporting this project: each tourist who stays at the lodge contributes, USD 100 is contributed. Some visitors give extra donations also, and thanks to their generosity, they are helping to make the scheme work.

All around the Chyulu region, human - wildlife conflict abounds. To dissuade Maasai warriors from killing predators in retaliation for killing their cattle, the Maasai receive an agreed amount for livestock killed, a sum which is paid quickly and fairly for genuine kills every two months. It is a process of self-regulation under which livestock owners are penalised if they break the agreement and financially benefit from honouring it. Maasai scouts coordinate the process, and it has become a resounding success through which everyone including the wildlife, benefits. The Maasai are also being encouraged to improve their animal husbandry. If they are to receive full compensation for livestock kills,



they must keep their livestock well protected at night within bomas that are strongly fenced, 4ft high and 4ft thick; and throughout the day, the herders are to keep their animals with them so that they cannot stray off and become easy prey. As livestock protection improves, kills and claims for compensation should decrease so that more money from the Fund can be made available for conservation-based jobs with higher wages. The key to the success of the scheme has been to listen to the Maasai and respond to their needs.

In April 2009, I helped on this inspirational predator compensation scheme with my friend Rishi Ahluwalia, travelling by motorbike with the scouts to verify reported livestock kills. I saw many carcasses killed by wild animals, but the Maasai were friendly and confident in the system and its fairness. They admitted they were finding it hard to give up a culture that for centuries has involved each warrior (moran) killing a lion, but they were accepted that lions needed to be kept alive nowadays as there were so few of them, and they realised that they now benefit economically if they do not kill them. They fully supported the compensation scheme and wanted it to work.

I returned in February 2010 to help again. I was interested to learn how the project had coped with the challenge of the 2009 drought. On arrival, I heard that about eight lions had recently been killed just over the border in Tanzania. Here, however, the lions



were still safe. Mbirikani Group Ranch is split into seven sections or zones. Each has a scout who is equipped with a radio and who lives in that section. If a livestock owner finds one of his animals killed by a predator, he reports it to the scout (between 8am and 6pm) who calls the Head Office at the lodge.

A tracker who can recognize the footprints and killing strategy of the predator, and an officer who writes the credit note for payment, go out together by motorbike to confirm the kill. They meet the owner of the animal at his boma and then go out to check the kill. Payments vary, depending on the type of predator and livestock killed. If a lion, cheetah, leopard or

Above:
Predator
Compensation
Fund payout.

elephant kills a cow, compensation is Ksh 14,500, a donkey Ksh 6,000 and goat or sheep Ksh 2,500. If a hyena, buffalo jackal or caracal kills a cow, compensation is Ksh 7,250, a donkey Ksh 3,000 and a goat or sheep Ksh 2,500.

There is a 70% reduction on this payment for livestock killed in a badly secured boma, and a 50% reduction for unattended livestock that are lost in the bush. (This is halved again to 25% of the full payment for a cow that is killed by a hyena). Compensation presently applies to livestock of either sex of any size, provided it has been born. Snakes, baboons, crocodiles, hippos and eagles are not considered predators in this compensation system.

Livestock kills in 2009 on Mbirikani Group Ranch		
Livestock	Number killed by predators	Compensation (USD*)
Cows	401	24,852
Goats & sheep	1,458	25,691
Donkeys	26	893
Total	1,905	51,436
* USD1 = Ksh 75/-		



Compensation is only awarded to the herdsmen on condition that no predator is killed or injured by spearing or poisoning in their zone over the relevant two-month period.

Because of the drought in 2009, many cattle were sold and many of the weak ones were left to die or be killed by predators. A 'cap' system is in place, however, so that there is a limit of no more than Ksh 650,000 that can be paid out over a two-month period. If more is claimed, a percentage is taken off credit notes for claims on lost (unattended) livestock that are killed. This stops the system from being abused in times of drought, as was the case during last year's drought. It also helps to discourage poor herding practices.

Of the livestock killed in 2009, 1,171 were killed by hyenas, 474 by cheetahs, 158 by jackals, 70 by lions, 16 by leopards, seven by caracals, five by elephants and four by buffaloes. The majority killed were lost in the bush rather than guarded by a herder; only a small number were killed in poorly secured bomas. It is the job of the scout of each section of the Group Ranch to see to it that the compensation fund scheme works properly and that everybody in his section complies with the agreement. The scout also checks irregular activities such as bushmeat poaching. For this work, he receives a salary.

There is also an advisory committee with one representative from each zone who is elected by the people in that section. It is the committee's duty and responsibility to inform the other members of the zone about the compensation agreement and also to confirm if a kill is genuine, should there be a dispute between the verifying officer and the herdsman.

The Maasai are thus fully involved in the project and are experiencing the economic benefits of conserving wildlife; they now accept that changing their traditional ways to spare lions or other predators is actually to their advantage, as instead they receive money for killed livestock from the Predator Compensation Fund.

The Maasai are so happy to collaborate with this new conservation ethic that they wish to dedicate for the first 20,000 acres of their land for a core conservation area and 4,500 Maasai shareholders, including women and their families, would receive regular revenue from this.



Right:
Predator Compensation Fund verification officers inspect a goat killed by cheetah.

Although I saw many livestock on my two visits that had been killed by predators, some were not. For example, on my last visit, a dead cow we went to inspect had died of natural causes and had been left out to be eaten by the dogs. It was thus recorded that Ksh 7,500 was to be paid that day by the livestock owner for his false claim or the sum would be deducted prorata from the valid claims made in that zone over that two-month period.

The money from this fine was to cover costs of petrol and time visiting the site and to act as a deterrent to stop cheating. Any money deducted at the end of the two months due to false claims is taken from the credit notes for lost animals, so as to reduce poor herding practices. There are three motorbikes kept at the lodge, and

a tracker and verifying officer will share a motorbike, getting into the bush to inspect a kill quickly. This means that three motorbikes can visit three sites at the same time. All motorbikes are often out at least once a day to visit a kill.

If an outsider who is not from the community comes in and kills or wounds a predator, Ksh15,000 is to be given as a reward to the informer who reports the case, on condition that the advisory committee agrees and that the offender is prosecuted. If a predator is killed by members of the community, there is a Ksh14,500 fine for each person involved (up to seven); these funds are kept for future operating costs. The deterrent is proving to be a success as no lions as no lions were killed in 2009 despite the long drought that year. Lions



The compensation programme, the first of its kind in Maasailand, has been such a success that it also now operates on two neighbouring group ranches, protecting predators on over a million acres in the midst of the Amboseli-Tsavo corridor.



would have been targeted without this working agreement.

Meanwhile, pressure on the ecosystem from a fast growing human population has been considerable over the past few years and will continue to increase. More people means more cattle, and more pressure from grazing will result in habitat degradation. The Maasai I spoke to found it hard to accept the problems associated with a burgeoning human population; most claimed they still wanted to have 10 children each. This cultural adjustment to having smaller families is desperately needed if the Maasai and their livestock are to prosper and not turn their habitat into a dustbowl. This, compounded with the increasing worry of global warming and loss of biodiversity means the people of the area have a vital task ahead of them to conserve their habitat for their future benefit.

The ecosystem can be saved if the Maasai at the grass-roots level continue to look after it and benefit economically from it. The Maasai are so happy to collaborate with this new conservation ethic that they wish to dedicate, for the first stage 20,000 acres of their

land for a core conservation area. This is presently being negotiated; it would allow 4,500 Maasai shareholders, including women and their families, to receive regular revenue.

The compensation programme, the first of its kind in Maasailand, has been such a success that it also now operates on two neighbouring group ranches, protecting predators on over a million acres in the midst of the Amboseli-Tsavo corridor. The Maasai used to view predators as the main threat to their livelihood, particularly the lions that they killed most frequently in retribution. This is not just a Kenyan problem. Lions are killed over much of Africa due to human-wildlife conflict. From perhaps 200,000 lions on the continent in 1970, numbers have dropped to less than 25,000 today, with only about 2,000 left in Kenya. This Predator Compensation Fund must be developed beyond its present range, but more funding and donations are desperately needed for this to happen. From these very positive beginnings in the Chyulus area, the programme ideally needs to grow and to cover the entire Amboseli-Tsavo ecosystem and beyond. ●

Above:
Predator Compensation Fund Meeting.

Although during the whole of 2009, not a single lion was reported killed in the entire Amboseli-Tsavo ecosystem, a unique achievement by any standard, the situation has since changed. In 2009, there was the worst drought for 50 years in this area, which devastated populations of Maasai cattle, zebras, wildebeest, and other large herbivores, with up to 80% lost in less than six months.

With lionesses and their young cubs desperate for food as 2010 began, attacks on Maasai villages and their livestock at night increased dramatically, causing human-wildlife conflict, and the tensions caused by it, to reach unprecedented levels. As a result, some lions tragically have been killed in recent months; some in self-defense and others in violation of the Predator Compensation Fund.

Fortunately, despite the losses, a core lion population remains to continue the repopulation of this region vital to wildlife and tourism. Without the ongoing effectiveness of the Predator Compensation Fund and all other coordinated conservation efforts expended during this drought crisis, it is a near certainty that the entire lion population of this region, or virtually all of it, would be no more and the economic effects for the local Maasai and all of Kenya would be catastrophic for years to come.

Tom Hill,
Trustee, Maasai Preservation Trust

Kenyan-born **RUFUS CAMM** has a passion for geography and wildlife conservation issues. He is presently taking a gap year and travelling around the world.



Carnivore-Livestock Conflicts: What about Humans?

BY MORDECAI OGADA



Livestock depredation is one of the major challenges to conservation in Kenya today, especially after the devastating drought we've just been through. However, closer examination of the issues around this problem reveals that it's just one of a complex web of challenges. Studies on the effects of livestock husbandry on depredation rates reveal that relatively simple adjustments in these can significantly reduce livestock losses. Overall studies on

livestock production systems also show that the negative impacts of other factors like disease and theft can equal, and often exceed, those of wild carnivores.

But here is the human dimension; looking closely at the reactions, we notice that other factors are somehow considered by pastoralists to be 'acceptable' losses, or those for which nobody else should be blamed. The loss of a single animal to a wild carnivore,

Above:
Cow killed and eaten by lions.

Pictures by:
Amy Howard

however, elicits demands for compensation, or retaliatory killing of carnivores. The impact of these killings was seen in the Kitengela area bordering the Nairobi National Park a few years ago. In Kenya, there have been attempts to address this conflict through monetary compensation after the ban on hunting in 1977. The allocated resources were not enough to compensate all wildlife damage due to corruption and the sheer volume of claims, and the programme ground to a halt in the mid 1990s. Since the end of monetary compensation, Kenya Wildlife Service (KWS) has taken steps to establish community

The loss of a single animal to a wild carnivore however, elicits demands for compensation, or retaliatory killing of carnivores.

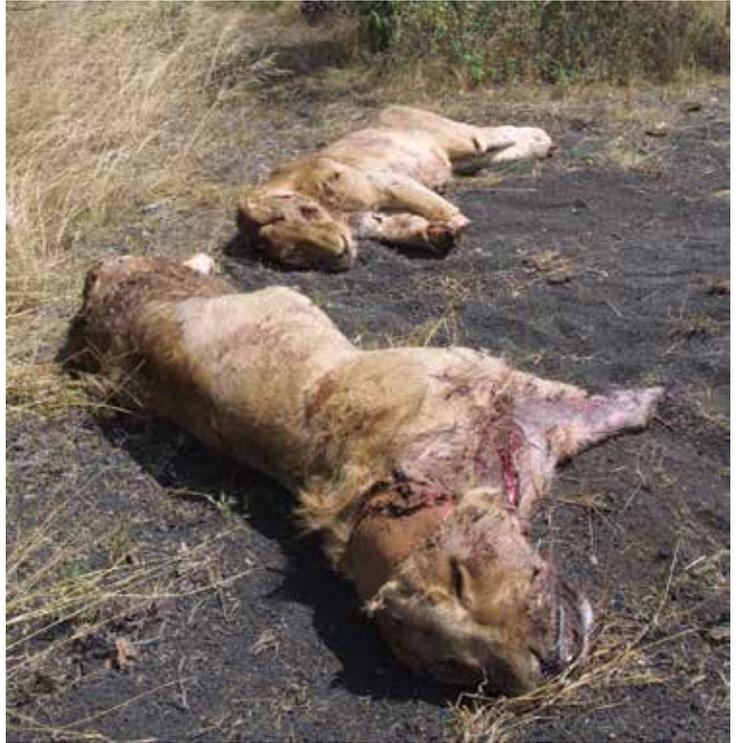


welfare projects in areas adjacent to National Parks. Since the communities were no longer being compensated by the government for wildlife damage, this policy was intended to give communities direct benefits from conservation, and has been a success.

But discontinuation of compensation for livestock losses without a formal policy/law stipulation has left a dangerous gap through which these gains could be reversed. The law has not changed, but KWS, as custodian of Kenya's wildlife, needs to make its position on the issue known, even as we seek longer-term solutions. Private compensation schemes are springing up in different parts of the country, presenting a serious challenge to carnivore conservation in the other (non-compensated) parts of the country. There is ample evidence in literature that compensation is neither an effective nor sustainable conservation tool, raising questions as to why 'conservationists' and qualified scientists are involving themselves in this practice. It is extremely difficult to investigate the veracity and circumstances surrounding claims. Data from the schemes themselves do not show any significant reduction in lion mortality as a result of the monetary compensation being handed out. The trend is picking

up, and Olgulului-Ololarashi Group Ranch, a 240,000-acre area to the west and south of Amboseli National Park, started one in June 2008, following the trend started in Mbirikani. What is the driving force behind this compensation trend?

Here again is the human dimension: My (rather blunt) assessment is that the commercial profit motive has finally spilled out of the tourist sector into all other aspects of conservation. A compensation scheme, by definition, is a pool of unplanned and unaccounted for financial resources. Nobody is immune to the attractions of such funds, whether they are to be used to fund research, community projects, or other noble objectives. The financial motive is unwittingly evident in the scheme designs. For instance, the Olgulului scheme only compensates depredation caused by lions, despite the fact



Above: Two young lions speared by pastoralists for livestock killing. Their paws have been cut off.

Below: Cow killed and partially eaten by lions.

that there are losses caused by hyenas, leopards and cheetah as well. The reason given for this is that leopards and cheetah aren't much of a problem, and the community knows how to 'deal with' hyenas. The Mbirikani scheme even has stipulated payments for cattle killed by caracals and jackals, which is a fairly remote possibility given the sizes of these animals relative to cattle of all ages.

It is a fact that lions tend to kill the highest numbers of livestock, but the more important reason for this focus is that communities consider lions the most attractive and exciting animal to tourists, and the most important to KWS. They are therefore most likely to get paid not to kill lions, rather than any of the other species. Further probing reveals that the 'dealing with' hyenas is most likely poisoning, an unfortunate side effect of the compensation scheme, but that's another story...

Wildlife research in Kenya is very expensive and largely supported by private funding. In many instances, donors strain to see the direct impact of his/her funding on the welfare of animals on the ground, unless they can read and interpret complex scientific findings. Compensation





There is ample evidence in literature that compensation is neither an effective nor sustainable conservation tool, raising questions as to why ‘conservationists’ and qualified scientists are involving themselves in this practice.

schemes present no such problem, and are consequently unmatched in ‘feel-good’ factors amongst donors (another human dimension). They can therefore attract very significant amounts of money from donors with relative ease. A number of these schemes are operated by up-market tourist facilities, with their clientele being the prime source of contributions, and the schemes themselves becoming selling points for their business.

Thanks to the grumbling of some conservation biologists, ‘compensation’ is becoming a ‘dirty word’ so there is wide use of the term ‘consolation’ ostensibly because the amount being paid out is ‘not equivalent to the loss’

Above:
Donkey killed by lions.

Here is another human dimension; When you live in Olgulului, at least 50 km from the nearest livestock market (and greedy middlemen), half the value of your animal here and now looks quite good, especially if all you need to do is leave it in the bush overnight.

Another human dimension ignored by compensation practitioners is the venerable mobile phone: Knowledge of these schemes spreads rapidly, and payouts in Amboseli are already causing some discontent as far away as Samburu and Laikipia in the north. We are hereby creating and spreading discontent, rather than involving communities fully in the benefits, knowledge, and responsibilities

of conservation. In this context, it would be better to give nothing at all than give handouts that cannot be sustained in the long term. Anybody who claims to be a conservationist must address the human dimension or element of any wildlife conservation challenge, or accept irrelevance. It is short-sighted, patronizing, and deeply insulting to assume that any community must be paid not to kill wildlife. To imagine that they are inherently incapable of understanding and participating in conservation, despite having co-existed with wildlife for millennia is unacceptable to me as a Kenyan conservationist.

The greatest failing of conservation practitioners and scientists in Kenya (and I am one of them!) is the failure to share the real knowledge about conservation with local communities. This in turn, is the reason why we have been unable to impress upon them the responsibilities



What actually happened was that, in an effort to fit the (largely misunderstood) ‘community conservation’ paradigm, conservationists and tourism operators have created a cycle of dependency and entitlement that has since proven impossible to break.

of conservation. This is evident in the way they view conservation as a short route to profit, rather than a principle to live by in the long term. Another pointer is the way compensation schemes have been presented to, and taken by, communities as a ‘share’ in the profits of conservation.

What actually happened was that, in an effort to fit the (largely misunderstood) ‘community conservation’ paradigm, conservationists and tourism operators have created a cycle of dependency and entitlement that has since proven impossible to break. The root of this problem is the fact that conservation practitioners and the tourism industry are, by and large, captive to the whims of their donors and clientele respectively. The actual needs of the communities living with wildlife end up lower down the priority list than they should be. This is why the numerous compensation schemes mentioned above do not appear to mitigate the problem of human-wildlife conflict.

In some instances, increased killing of wild predators has been documented after the launch of a compensation scheme. Wildlife conservation is a long-term goal, and has to be pursued using sustainable means. The establishment of community conservation areas and community owned eco-lodges has gone some way towards achieving this aim. These facilities have created employment and new livelihoods for members of these communities, but these have been limited. There needs to be a more thorough exploration of existing livelihoods, and how they can



be enhanced to bring maximum returns to these communities. In Kenya’s pastoralist areas, establishment of livestock markets and production infrastructure might work. If we tried this, it would be crucial that the livestock marketing initiative detailed above addressed the cultural and marketing issues (read: human dimension!) surrounding livestock production. It will take considerable persuasion and cultural understanding to ensure regular sale of animals from pastoralists. For example, the importance of cattle to the Maasai people in Kajiado far exceeds their monetary value. The aesthetic value of particular animals to their owners is such that they are irreplaceable by money or more animals. It is therefore unlikely

Above: Lion shot for stock killing next to the cow that was killed.

that we can achieve livestock disposal to the level where entire herds are sold. Some will always be kept for their aesthetic value or cultural significance (e.g. to be paid as dowry). It is for this reason that hyenas are so despised by

the Maasai. Chief Saiyanka Oloitiptip of Olgulului told me they occasionally injure these prized cattle severely without killing them, e.g. biting off tails, udders, or ears unlike lions that always kill the animal in the attack before attempting to eat it. This is yet another human dimension that I am yet to hear any conservationist refer to.

It is of paramount importance for KWS to strengthen its research arms. Scientists working under the auspices of a conservation authority are (or should be!) able to objectively address conservation issues. The wildlife conservation sector in Kenya and much of Africa is dominated by independent scientists and consultants whose agendas are largely dictated by sources of funding. I am a conservation biologist, but I must acknowledge one of our greatest weaknesses. When a particular problem attracts good funding, scientists try to study and

document it rather than solve it. Why? Because this maintains the stream of funding, publications and continued professional relevance that the problem provides. Institutional-based scientists would (in theory!) be free from these limitations. ●

DR. MORDECAI OGADA is a carnivore ecologist who has been studying conflict issues between humans and wild carnivores for over 10 years. He also has a scientific interest in fisheries and aquatic ecology. Dr. Ogada is a member of the KWS carnivore management committee and currently works with the Wildlife Conservation Society and Zoological Society of London as coordinator of the regional conservation strategy for cheetah and wild dogs in Eastern Africa.



Lake Naivasha

AN ECOSYSTEM DYING FOR MANAGEMENT

BY DON TURNER

Lake Naivasha, long regarded as the jewel in the crown of Rift Valley lakes, was known the world over for its crystal clear waters and rich biodiversity. It was arguably one of Kenya's most valuable ecosystems and freshwater resources. Over the years, lake levels have fluctuated dramatically and it is reported to have been dry within historical times due to prolonged drought.

Throughout its turbulent history, the lake has witnessed dramatic ecological changes, but never more so than during the past 30 years when it has been subjected to sustained abuse by way of uncontrolled and unplanned human activities

Above: Lake Naivasha's shoreline, once covered with water.

Insert: Great and little Egrets in the shoreline.

Pictures by: Paolo Torchio

resulting in totally unsustainable exploitation. The lake supported diverse habitats ranging from the lakeshore's acacia woodlands, a papyrus belt on the fringes and its shallow lakeshore lagoons.

Around the lake's edges, papyrus was always the dominant plant and by far the most important in the entire lake ecosystem. It acted as an efficient silt and nutrient filter as well as providing an important habitat for fish and bird species, both as a refuge and feeding area.

However the extent of this papyrus belt has dramatically changed in recent years as a result of receding water levels, fires, bovine and human encroachment

and its subsequent conversion to farmland.

Immediately following independence in 1963, Lake Naivasha became a major tourist attraction, hotels and lodges mushroomed and the resulting foreign exchange earnings provided a major boost to the Treasury. Bird-watching was fast becoming the world's fastest growing leisure activity, and with nearby attractions like Hell's Gate Gorge and the Eburru Forest, Naivasha soon became a must-see stop on all itineraries for the many thousands of overseas ecotourists who visited Kenya during the boom years of the 1970s and 80s. Despite their numbers, they



Throughout its turbulent history the lake has witnessed dramatic ecological changes, but never more so than during the past 30 years when it has been subjected to sustained abuse by way of uncontrolled and unplanned human activities resulting in totally unsustainable exploitation.

had a very minimum impact on the already fragile environment.

However it soon became apparent that all was not well and quite dramatic ecological changes began to emerge through the effects of several introduced alien species. Firstly, during the 1970s, the Coypu (*Mycocaster coypu*) and the Louisiana Red Crayfish (*Procambarus clarkii*) found their way into the lake, and began slowly eating through its extensive beds of water lilies and plants. Later a floating plant, *Salvinia molesta*, itself a problem in the 1980s, was replaced in the 1990s by the notorious Water Hyacinth (*Eichhornia crassipes*).

All these invasive alien species had a devastating effect on several bird species, most notably the Red-Knobbed Coot, whose numbers declined dramatically.

All the fish in Lake Naivasha have been introduced, and it was largely the two tilapia species and the Black Bass that supported a once very productive fishing industry.

However the illegal fishing that later extended to the entire lake, often using small-mesh gill-nets that catch thousands of under-sized fish, resulted in a serious slump in both fish populations and a high mortality in diving birds such as the Great Crested Grebe, Long-tailed Cormorant, and African Darter. As a result these once common breeding birds at Naivasha are now only very rarely recorded. At the same time the Naivasha area began to witness an extraordinary explosion of both horticulture and agriculture for the European export markets. The climate, soils and a plentiful

Below: Damage to the ecosystem puts fishermen and their clients at risk.

supply of fresh water were quickly seen as the ideal requirements for the intensive production of flowers and vegetables for the supermarkets of Europe.

Large areas of woodland and grassland were cleared with cultivation sometimes extending right down to the lake edges, and irrigated agriculture and horticulture soon took over vast areas of the District. In addition, a nearby geothermal plant began extracting large quantities of lake water for its geothermal requirements. Agriculture and water diversion in the upper catchment areas also intensified. Such intensive chemically dependent agricultural development soon began to have an effect with increased amounts of sediment, nutrients and potentially hazardous chemicals reaching the lake.

The Lake Naivasha Riparian Association, mandated to ensure that all riparian lands are safeguarded and itself a RAMSAR Wetland Conservation Award winner in 1999, soon realised the potential threats to the environment. Following initiatives by the Association, the Kenyan Government in 1995





Large areas of woodland and grassland were cleared with cultivation sometimes extending right down to the lake edges, and irrigated agriculture and horticulture soon took over vast areas of the District.

nominated Lake Naivasha as its second RAMSAR site, with the Kenya Wildlife Service (KWS) mandated to ensure that the lake and its environment remained in as pristine a condition as possible. At the same time, the Riparian Association, in conjunction with all Naivasha stakeholders, drew up a Management Plan to deal with all potential threats to the lake.

It was developed to ensure that all adverse impacts on the lake's ecosystem were minimised and corrected. It was also seen as a tool with which to lay down guidelines towards effective regulation of all human activities in the entire Lake Naivasha basin. The implementation of this plan was vested in a committee comprising the nominated representatives of: the LN (Lake Naivasha) Riparian Association, the LN Growers Group, the LN Tourism Group, the LN Fisherman's Cooperative, the LN Pastoral Community, IUCN, NEMA (National Environmental Management Agency), KWS (Kenya Wildlife Society), KenGen, Naivasha Municipal Council, District Commissioner's office, the Fisheries Dept, Water Resources Management Authority and the

Above: Lake Naivasha's waters, once clear and healthy, are now brick-red and choking fish life. The cause is as yet unknown.

Below: The bones of a hippo and other animals collected from the vanishing shoreline.

Ministry of Agriculture. The government, seeing both the importance and urgent need for such a management plan, gazetted it into law in October 2004. It was seen at the time as the beginning of a new era in the history of Lake Naivasha.

Sadly, it instead marked the beginning of the end of Lake Naivasha as we all once knew it. Within weeks of the publication of the Gazette Notice, an injunction was brought to prevent any implementation of the Management Plan. This remains in force today. Meanwhile the burgeoning horticulture and

agriculture industry continued to attract migrant workers from all corners of the country, and several unplanned townships emerged around the lake to service the ever-expanding flower and vegetable farms that produce staggering amounts for export to the supermarkets of Europe.

A ten-fold increase in the human population around the lake during the last 30 years has led to severe degradation of the lake, as well as of the adjacent grasslands and acacia woodlands. Similarly, the bovine and human encroachment of all riparian lands has led to a 90% loss of the all-important papyrus fringe, resulting in a huge increase in the amounts of nutrients entering the lake. At the same time, the breakdown several years ago of the town's sewage treatment system has resulted in large amounts of raw sewage entering the lake on a daily basis.

On paper, horticulture may show high foreign exchange earnings and high employment, but at what cost to the environment? It is a well known fact that the growth in horticulture closely paralleled the demise of the local tourism industry, and with close to half a million people crowded into the ever-expanding unplanned townships around the lake, the demand for wood fuel alone has led to the increased degradation of the entire lake basin environment. Similarly the quality of the lake water, on which so many households are totally dependent, has declined dramatically, to such an extent that quite recently serious concerns were expressed at the ever-





boreholes, inevitably contributing to a further drop in all ground water levels. The bare fact is now staring everyone in the face: the lake is dying. The entire lake basin ecosystem faces collapse. Can we simply sit back and ignore what is happening? Do we not have any responsibilities for future generations? The horticulture

industry, KWS and the Naivasha Municipal Council are all indirectly responsible for what has happened to the lake in recent years.

The growers are proud to have built schools, hospitals and, in some cases, housing for their employees, but is it unreasonable to ask them to do something for the lake? If there is a future reappraisal of the impact that horticulture has had on the environment around Naivasha, surely they can contribute handsomely towards the costs of any restoration and resuscitation of the lake and its ecosystem?

Quite recently, some of the growers signed a memorandum of understanding with Naivasha Council promising to contribute several million shillings per annum to the Municipal Council to assist with their ongoing community projects. Surely a similar amount can be made available to help save one of Kenya's most valuable freshwater resources from turning into what can only be described as a vast sewage pond? Today, Lake

deteriorating conditions around the lake. Surface and ground water abstraction by horticulture and agriculture have lowered the lake level by several metres while ground water levels have been depleted even further.

The lack of any planning and law enforcement for the past 30 years has led to a succession of negative impacts on the lake's ecosystem. Despite the legislation being contained in the Environment Act of 1999, the Planning Act, the Agricultural Act, the Local Government Act and the Naivasha Municipal Council by-laws, there remains a "free-for-all, business-as-usual" attitude throughout. As a result the lake has suffered a series of algal blooms, the latest turning the water into a thick, brick-red, soup-like murk.

Fish are dying in large numbers, and every month the lake water becomes less and less suitable for both horticulture and domestic use, forcing everyone to turn to installing more and more

Left:
Giant Kingfisher, but fishing for what these days.

Below:
A dead black bass in the Naivasha murk.

Naivasha has been downgraded one place on the Montreux Record, due to the serious biodiversity changes that have taken place. The lake technically remains under the stewardship of the Kenya Wildlife Service.

The all-important Management Plan remains in court, unheard and unresolved. Meanwhile all former extractors of lake water are now busy installing borehole after borehole. Hundreds of tons of Naivasha produce continue to be flown every night to Europe. Supermarket chains proudly display Naivasha flowers for all to admire and take home, but does the consumer have any idea of the conditions under which their flowers and vegetables are cultivated?

Do they have any notion at all of the conditions of the lake, the environment and the sacrifice that all residents of Naivasha will ultimately have to make for the uncontrolled and unsustainable exploitation of one of Kenya's most precious resources? Naivasha, the lake, its wildlife, and everyone around it deserve a better deal. Now more than ever, it is incumbent upon the Municipal Council, Kenya Wildlife Service and the horticulture industry to step up to the plate and collectively ensure that something be done, and done quickly, before an environmental tragedy of monumental proportions takes hold.

The bottom line is surely the quality of the lake water, so construction of a new and safe municipal sewage treatment plant, coupled with the immediate protection of all existing areas of papyrus, allowing for regeneration and replanting where necessary, are but two measures that one would hope KWS and the horticulture industry would be happy to be associated with. Miracles will not happen overnight, but given a chance the quality of lake water will ultimately improve if such measures are undertaken. ●



DON TURNER

Is a longtime resident of Naivasha and environmental enthusiast



A new approach to conservation in Grumeti

BY LAURA HARTSTONE



use this market to benefit the local community by stimulating business opportunities. The project involved encapsulating a critical section of the Serengeti ecosystem and turning it around 180 degrees.

“It was not easy coming in here,” Brian Harris, managing director of the Grumeti Fund, explained. “It was really a new idea...a completely new way of thinking. And although we wanted to bring in expertise from across the continent and across the planet, things work differently in Tanzania.”

The task was daunting. “There was nothing here. We slept in a tent on the edge of this small hill,” Brian continued on the hill where Sasakwa Lodge now sits. “I remember when we arrived in 2003, the only game around were a couple of guinea fowl. There was literally nothing. No resident wildlife. No poachers. There

was nothing to poach.” To create a safe haven for resident animals and migratory herds, a strict ranger force was introduced. There was little doubt that as wildlife recovered, poachers, too, would revisit the area.

The operation quickly gained a reputation for being militant. Local communities were sceptical and the government was far from happy. Singita employed its own scouts to monitor IGGR directly rather than employing them through the government’s Wildlife Division. This gave them the allure of a private army. Furthermore, because they were independently hired, they were not allowed to bear arms.

It’s a classic tale of poachers turned gamekeepers. Two game reserves that once relied on hunting for income are now being managed to promote shooting with cameras instead in a scheme to promote tourism and earn income for the community. And many of the people who protect and enforce the conservation rules were once poachers themselves.

To aid conservation and help both human and wildlife populations, a new approach was implemented – hunting with a camera.

Above:
Saitoti - a guide at Singita.

Pictures by:
Laura Hartstone

Ikorongo and Grumeti Game Reserves, commonly referred to as IGGR, share two borders on the northwest boundary of Serengeti National Park. The areas feature critical stands of woodland, vast riparian habitats along the Grumeti River and endless grassy plains.

To aid conservation and help both human and wildlife populations, a new approach was implemented – hunting with a camera. But the problem originally posed was that the animals were too scarce to attract tourists. Singita Grumeti reserves took a three-fold approach; secure the wildlife population, introduce sustainable tourism and then

A large group of the men agreed that if they were provided with an alternate source of income, they would abandon poaching altogether.

Acknowledging these hardships, Singita recently restructured so that all of their rangers are employed through the Wildlife Division and thus recognised as a legal protection force. Singita's approach to poaching was to target the problem directly. Initially, they recruited only men who had been arrested for poaching in the area. This ensured that the men not only knew the area but also knew what poaching looked like.

Singita's hope was that by offering the men a job and training, they would cease illegal activities. A large group of the men agreed that if they were provided with an alternate source of income, they would abandon poaching altogether. From that group, Singita's rangers were chosen and trained. The original 125 ex-poachers happily turned to resource protection and law

enforcement. Using GPS tracking systems and high-frequency radios, Singita ensures that the rangers are covering the entire area of IGGR, 6,414 km², on foot every month.

Though the effort may have seemed militant in the beginning, it has proven to be highly effective and likely the best resource protection force in Tanzania today. "Wow...I cannot believe this," Saitoti, one of Singita's top guides, exclaimed as he focused his binoculars to get a closer look at a group of resident topi. He was not observing anything peculiar, but was astounded that years ago these topi never would have crossed into IGGR from Serengeti.

"This place has changed a lot," Saitoti continued. "You know...part of our job for a long time was to drive around and habituate these animals." Having grown up near Ngorongoro Crater, Saitoti's love

Below:
Elephants in
Grumeti Game
Reserve.

for wildlife and the outdoors was embedded in him from childhood. "There is no other place I would rather be. Here, any day, I might see a journey of giraffe, a crush of rhino and a dazzle of zebra. I love this place," he finished with a grin. IGGR's wildlife numbers have increased exponentially in the past seven years.

The annual wildebeest migration passes through in July and again in October. Resident game seeks refuge in IGGR and reaps benefits from the waters of the Grumeti and the nutrients in the soil. Rare species such as leopard, serval cats and cheetah can be spotted. And as the numbers of animals rise, so does the number of tourists.

Three lodges were built around Grumeti to accommodate high-end, low-impact tourism. Singita wanted to cater to an elite class with top quality lodging. The first lodge built was Sasakwa, perched on the small hill where Brian used to pitch his tent. Built with a 1900s colonial feel, Sasakwa boasts seven guest cottages all with spectacular views overlooking the plains below. Complete with private





swimming pools and flat-screen televisions, Sasakwa offers far more than basic amenities.

Singita's second lodge, Sabora Tented Camp, was strategically placed out in the plains. The camp comprises a variety of tents; the library tent, the gym tent, the main eating area tent and the guest tents. The aim is to bring guests further into the bush, allow them to hear the animals at night and enjoy zebra on their doorstep.

Their third lodge, Faru Faru, opened in 2007 on the banks of the Grumeti River where guests can enjoy elephants passing by and the sounds of birds in the morning.

Low-impact tourism is about protecting the environment and providing economic benefits for local communities. The Grumeti Fund was established in 2002 to address these issues through wildlife conservation and community development. The Fund uses all profits brought from tourism to establish direct links between people's livelihoods and wildlife.

Above:
Environmental
Education Centre
with Sue teaching.

"We are working to ensure that our staff care about this area," Sue Van Rensburg, an ecologist working for Singita, explained. "They continuously go through training and have opportunities to meet with experts." Singita's guides work directly with visitors to educate them on the importance and beauty of the area. They prohibit off-road driving in the wet season and frown upon creating too many tracks in the dry season. When wildlife is spotted, only three cars are allowed to be at a sighting. If a rare species is found, only one car is permitted.

Sue's current undertaking is a project to eradicate alien species in the area. She can be seen giving lectures and assisting researchers. When she has spare time, she shares her passion with students

at the Environmental Education Centre, another new project supported by the Grumeti Fund. The Centre is complete with dorm rooms, a classroom and an eating space that can house 12 children at a time. Every month the Centre brings in a dozen schoolgirls and a dozen schoolboys to take part in a hands-on environmental learning session lasting five days. They spend time in the classroom going over key principles and theory, and a great deal of time in the field.

All of the students come from nearby communities and stay at the Centre for the whole week. At the end of their stay they are required to present a project that they will take back to their school. Some start tree nurseries while others look at rainwater catchment and other ideas.

Over the past eight years, Singita has seen a 59% increase in resident wildlife moving from the Serengeti National Park to take refuge in the security that IGGR now provides.



They are expected to become environmental ambassadors and initiate an environmental club at their school. Not only do other students then benefit, but community members as well.

Other projects supported by the Grumeti Fund extend into the nearby villages. Apart from hiring over 600 local Tanzanians, Singita's efforts support community projects on the periphery of the reserve.

Richard Ndaskoi, from Arusha, now works as the Community Outreach Coordinator. He has his hands full working to sustain various small-scale initiatives that the Fund supports including the installation of irrigation pipes for farmers, a sunflower oil processing plant, wells for drinking water at public schools and a system using human waste for biogas.

Richard has also helped to institute a Farmers Association. The Association is comprised of local agriculturalists who own farms and produce a variety of crops. A small centre was built to



give the farmers a venue to sell their goods each week. Singita will provide further assistance by purchasing quality products from them to use at the lodge.

With over 600 staff, the lodge has a large demand for food. Through all these projects, Singita strives to incorporate community involvement and sustainability.

Above: Three-week-old giraffe with Singita Land Rover in the background.

Community projects, like conservation initiatives, have no recipe for success. Hopefully communities will gain economically from IGGR and reduce pressure on the wildlife in the reserve. And perhaps more importantly, they will feel a reduction of conflict with wildlife and support the conservation measures in place.

Over the past eight years, Singita has seen a 59% increase in resident wildlife moving from the Serengeti National Park to take refuge in the security that IGGR now provides. Their guides are stellar. ●

LAURA HARTSTONE

A former U.S. Park Ranger, Laura now spends much of her time in the Serengeti and writes and photographs for international publications.

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Corneille Ewango

A poacher's sidekick turned prize-winning conservationist

INTERVIEW BY CURTIS ABRAHAM

You started out not as an award-winning conservationist but as a poacher's assistant in the Democratic Republic of Congo.

Yes. As poachers my uncle and I hunted large mammals like forest elephants

Below:
Corneille Ewango

Pictures by:
Curtis Abraham

and hippos in some of the rivers in our home area of Bomongo, in Equateur Province. I was about 12 when I used to go with him. But hunting was not just for sport or leisure. It was a socio-economic activity that allowed us to improve our family income. Thanks to it, I had the opportunity to get organised and attend university and to specialise in nature, tropical botany and environmental conservation.

considered a real man with all the responsibilities that go with it. If a hunter kills an elephant or leopard, it's celebrated with traditional ceremonies that bestow upon you the respect and social consideration of the rank of traditional king and strengthen you as a warrior.

.....
What made you change from hunting to wildlife conservation?

When I was assisting my uncle on his hunting safaris, I was about to finish secondary school, and had no idea that I would study conservation one day. But I had already become interested in biology and chemistry. The poaching we did provided me with financial support to start my university studies for the first year. When I applied to university, I wanted to do biomedical sciences but I was admitted into the biology department. As I progressed in biology, I discovered a passion for botany and forest ecology studies. In retrospect, I think also the observations of wildlife made while poaching in the Congo forest also nurtured my enthusiasm for conservation.

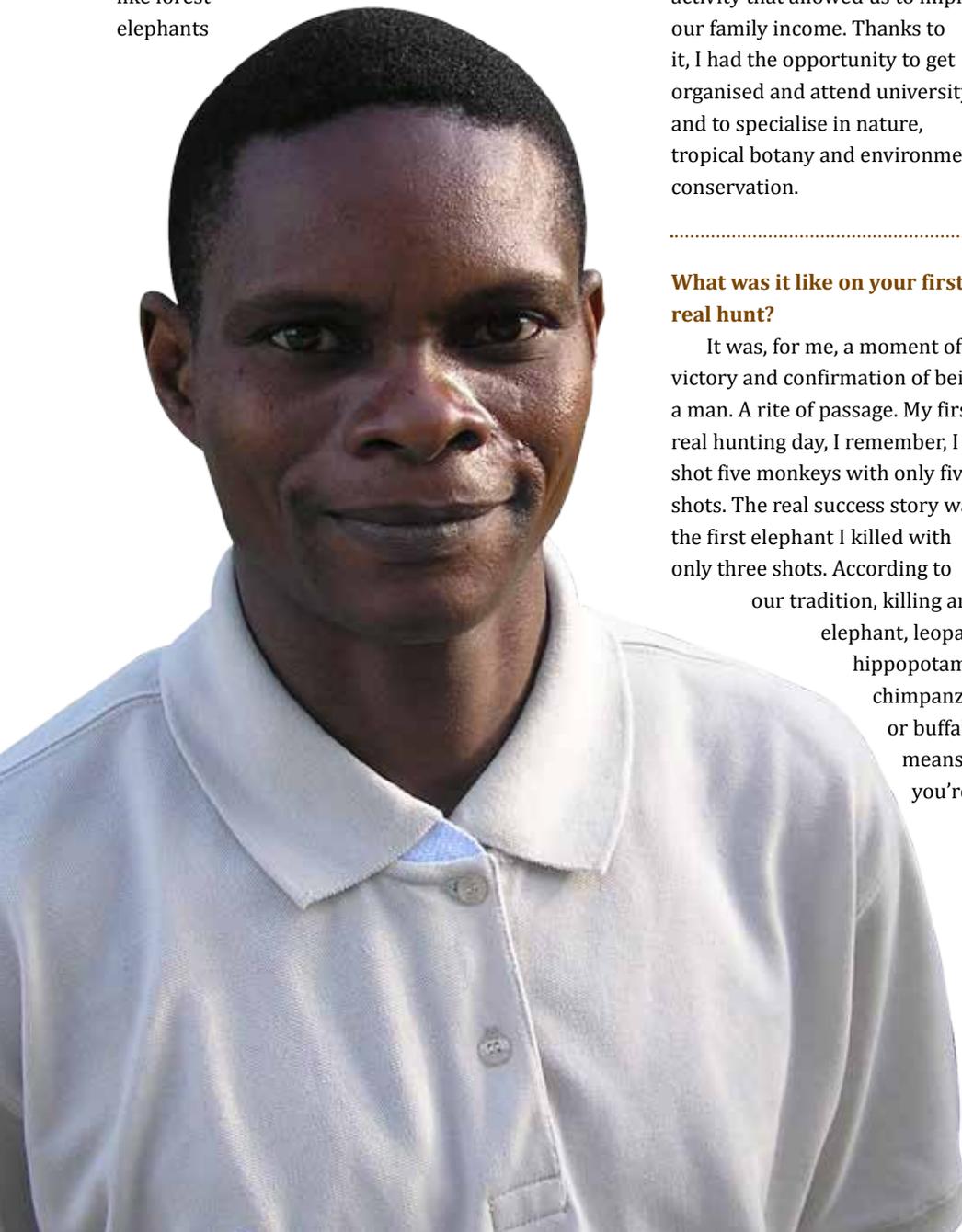
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What was it like on your first real hunt?

It was, for me, a moment of victory and confirmation of being a man. A rite of passage. My first real hunting day, I remember, I shot five monkeys with only five shots. The real success story was the first elephant I killed with only three shots. According to

our tradition, killing an elephant, leopard, hippopotamus, chimpanzee or buffalo means you're

.....
Why botany?

Few young Congolese have dedicated themselves to learning what is in the large forests in





Few young Congolese have dedicated themselves to learning what is in the large forests in their country and even fewer are studying the flora of their country.

their country and even fewer are studying the flora of their country. This makes me sad but it also makes me more determined to fill the gap. I know I will not achieve this alone but great progress has been made and I think my life will be an inspiration to others. I remember we were four students who got our degrees at the University of Kisangani's Department of Ecology and Nature Conservation in 1995. We studied phytosociology and plant taxonomy. Later we started doing practical work in botany and conservation. Since then the number of students has doubled and even tripled. I think we pioneers were an example for later students to follow.

Why is the okapi so special that it should have its own world heritage faunal reserve?

The okapi is one of the 28 mammal species that are endemic to the DRC. It's a strange species of giraffe that has a zebra's stripe patterns on its legs. Its origin is probably the savannah. It's very shy and very beautiful to see either in the zoo or in its natural habitat. Congo had been at war with itself for over a decade, so many poachers entered the reserve and some other protected areas. We know that during the wars of the late 1990s and early part of the new millennium, the okapi were hunted by rebel soldiers.

Our last estimate of their population was around 1996 when we recorded about 4,500 5,000 okapi in the wild. It's an endangered species so the Okapi

Faunal Reserve was created to protect it and its environment, the fabled Ituri Forest. The flora of the reserve is also rich in plant species. The Ituri Forest is also home to pygmy hunter/gatherers, Africa's first inhabitants. Their lives depend entirely on forest resources.

Within the reserve, okapi numbers have slightly increased. But the reserve is facing rising poaching pressure from militia and army soldiers who are operating directly or by organising and supporting some professional poachers. Poachers kill okapi not often for their meat, but more for the skin, saying that it is worth more than USD 20,000.

What is it like living and working among the Ituri pygmies?

I found their knowledge of the forest resources incredible for a people for whom modern life and education is meaningless. The importance they have for forest conservation and long-term resource exploitation is very admirable. For a naturalist, they are like discovering a great book of nature and the mysteries of forests.

Do they understand the work you are doing?

By using their knowledge and promoting their integration into local communities, they are learning a lot and are more enthusiastic about working with us. Not only do they have an interest but they understand

what they are doing. However, the results of our research are difficult for them to grasp since it involves complex ecological principles.

When did the area start becoming dangerous for you and staff?

The danger began in 1996 but from August 2001-2002 was the worst period. This period was the heart of the escalating violence that embraced the Congo. Daily life was ruled either by the occupying militia or army, being government or rebel forces. Everything has been controlled under military law that in most cases was oppressive if not brutal.

It was difficult to stay and help with the soldiers and militias looting and destroying infrastructure everyday while they pretended to liberate the country and people. Every single day that passed plunged us into darkness and it was unclear where the country was headed.

What did you do when your colleagues started fleeing the reserve?

Some of us had to assume leadership roles, to fill the void of those who left. The first thing we did was to define our priorities and build working strategies that were accepted by all who remained. Through it all we continued to remain optimistic and dedicated to the cause of saving the reserve. We remained organised, functioned as a unit and kept in close contact with all our workers and junior staff, who remained at the station. Of course, saving the Centre de Formation et de Recherche en Conservation Forestiere's (CEFRECOP's) scientific equipment and data was one of our main concerns.



It makes me eager to do more and I think my award will inspire more students in the DRC and elsewhere to enter the field of nature conservation.

What finally made you flee the reserve and hide in the forest?

The insecurity was growing and everything that I was doing was suspicious to the rebel soldiers. My every move was scrutinised and I was kept under constant surveillance. Then they started concocting all kinds of lies, that I had a lot of money to run the project and they wanted me to give them the money along with gold, coltan, ivory, etc, things that I didn't have, of course. The soldiers

Below:
Corneille Ewango
in his office.

humiliated me and I was witness to their atrocities, I felt that I had to escape to save my life.

How did you survive while living in the forest?

Saving my life was more important than sleeping. But when I did sleep, I slept on the bare ground with the clothes I had on. Sometimes I slept on the rocks or under the rocks and so on. Fortunately I am a botanist,

so know which wild fruits in the forest are edible and from time to time I wandered in the nearby vegetable gardens to collect some sugar cane, sweet potatoes and cassava tubers, which I ate raw because the smoke from a fire would alert the rebels to where I was hiding, then they could have tracked my footprints. It was important to adopt a primitive life to survive.

Yet through your ordeal you communicated to the outside world with a satellite link for email and a small solar panel.

My security and my family's were not guaranteed. So I didn't want to let the warring factions know what I was communicating, I could have been executed. Even though the war has formally ended, different rebel armies that had control of those areas continue to exist today.

But what I can tell you is that I was sending emails to the Wildlife Conservation Society (WCS) headquarters in New York; to Drs. John and Terese Hart, who were the directors of CEFRECOF and who were also the coordinators of the Wildlife Conservation Society-DRC programme; to the director general of Congolese the Institute of Nature Conservation Kinshasa; UNESCO; and to Gilman International Conservation, one of the international NGOs managing the reserve with WCS staff in New York. I also sent messages to many other colleagues overseas who had influence in the conservation community.

How did you feel when you received a Goldman environmental prize a few years ago?

I was thrilled. This was not only recognition of our





To me the award is not only for the Okapi Faunal Reserve but for all the national parks and other protected areas in the Congo.

commitment and hard work but now we have more responsibility in the world to protect our environment. It makes me eager to do more and I think my award will inspire more students in the DRC and elsewhere into the field of nature conservation. As a winner, I do not set limits on myself. I still have further goals and objectives to achieve. My hope is to bring a new concept to forest conservation in a country of a vast wealth of natural resources. To me the award is not only for the Okapi

Faunal Reserve but for all the national parks and other protected areas in the Congo.

What is the security situation like today in Ituri forest?

I would say that inside the reserve the situation has improved greatly and we have full control of the reserve. Our park guards are deployed in all the strategic points of control and patrol posts of the reserve, and our research and monitoring team is circulating and

undertaking biological surveys all over the reserve. But the situation is unstable as our guards are all the time under fire from armed poachers, some of them soldiers. In 2009, three of our guards were killed during a series of poacher attacks. Poachers are provided with automatic guns and ammunition from some malicious army and police commanders. In most instances they appear to be more heavily armed than our park guards. ●

CURTIS ABRAHAM is a science writer based in East Africa and New York. He is writing two books about East African pastoralists, the Bahima and Karamojong.



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Did you know some birds send SMS messages?

BY CORINNE J. KENDALL

It is a cool morning in the Maasai Mara. I wait patiently almost 100 metres from the Thompson gazelle carcass. The skies are empty and I know it will be another hour before the air warms and the birds I am so patiently waiting for take flight. In the meantime, I watch the wildebeest as they pass one by one in a strange procession resembling a column of soldiers

The White-headed vulture reminds me of the Geishas of Japan – beak unnaturally red, powdered white face, and just a touch of blue and purple to revitalize the face.

Above:
A Lappet-faced vulture descends on a White-headed vulture near a carcass.

Pictures by:
Corinne J. Kendall

in a parade. They walk with such determination and purpose, following the rains and the grass as they continue their long migration. Finally the first bird arrives. He weaves left and right, left and right, circling once, twice, before finally landing.

The Bateleur positions himself close to the carcass and is just about to start feeding when the next bird comes down. The Tawny Eagle lands right next to the Bateleur. A long stare and a short jump, then possession of the carcass shifts. The Tawny begins gorging itself as the Bateleur takes to the skies once more. After several beak-fulls, the Tawny notices a small loose piece and

just in time. As she reaches her talons around the meat, the next scavenger arrives. I know the White-headed vulture is female because of the white secondaries that fan her body.

Her size isn't enough to intimidate the Tawny, but with a piece of food in its talons, the eagle soon takes off and lands in a nearby tree to finish its food alone. This suits the female White-headed vulture just fine and she rips off a piece of flesh with great vigour. Who says all vultures are ugly? Looking at the White-headed vulture I am reminded of the Geishas of Japan – beak unnaturally red, powdered white face, and just a touch of blue and



Recently publicised as a leading cause of lion declines in Northern Kenya, carbofuran poisoning has also taken its toll on vultures, which have nearly disappeared from the Laikipia area.

purple to revitalize the cheeks.

Even the mannerisms are cool and controlled and the female pauses occasionally to glance around. Unfortunately her meal is also short-lived as a pair of Lappet-faced vultures rush in, their feet hanging beneath them like an airplane's landing gear as they hop into their landing. The red-headed pair seem to have an agreement and one Lappet-faced vulture begins feeding as the other tilts its head, looking up and to the sides, checking for intruders. Wings positioned to the side making them look exceedingly large, the Lappets move towards the White-headed vulture, pushing her aside with ease.

The White-headed vulture backs away, though not without one gentle nip in the direction of the Lappets. As one member of the Lappet pair rips into the carcass, the other occasionally lowers its head hoping for a bite. Then the marital dispute begins and the feeding bird gently bites its mate on the neck, releasing to look her in the eye, beaks touching as they lift their heads in unison. Battle resolved the first bird goes back to feeding.

The first African White-backed vulture seems to have come from nowhere and yet a quick glance to the sky reveals nearly 20 African White-backs and Ruppell's vultures that have recently found the carcass, circling above. After the initial landing, these Gyps vultures seem to pour in one after another. Soon the carcass has vanished beneath a pile of squirming, fighting, and screeching birds. The vultures let out hisses and squeaks as they squabble for position and in the end only



about half the group feeds. At this point, a pair of Hooded vultures and a single Marabou stork are hanging around the periphery of the group. The small Hoodeds grab small pieces that seem to go unnoticed by their comrades and the Marabou steps in to steal the larger pieces of meat as they are dislodged from the carcass by the African White-backed vultures.

Noticeably missing not just from this carcass, but from the entire Maasai Mara ecosystem, is the Egyptian vulture. In three months of vulture research in the Mara I did not see a single Egyptian vulture. Recent surveys done by The Peregrine Fund show that the Egyptian vulture is not the only one in trouble. In the last 30 years, the other five vulture species have declined by over 50% in the Maasai Mara and its surrounding environs. Their surveys substantiate my observations that the Egyptian vulture has become locally extinct.

Above: Ruppell's vultures fight as a Marabou stork looks on.

Tawny eagles also appear to be in trouble, having declined by 30% in the same period, though their numbers have actually increased in the reserve itself.

While the causes of vulture declines in East Africa may not be as cryptic as they were in Asia, we still don't really know what is happening to the vultures and their avian competitors like the Bateleur, Tawny Eagle, and Marabou Stork. There are a few suspected problems. The most glaring threat is carbofuran poisoning. Poisons are placed on carcasses by pastoralists and livestock ranchers, generally to kill lions and hyenas. Recently publicised as a leading cause of lion declines in Northern Kenya, carbofuran poisoning has also taken its toll on vultures, which have nearly disappeared from the Laikipia area.

In three months, I saw two cases of poisoning in the Mara, but one can be sure that many more are occurring without anyone ever knowing. Another issue is land-use change around the reserve, which has caused dramatic declines in the resident ungulate populations



the entire ecosystem. The aim of my research will be to determine the reasons for vulture declines and what can be done about them. My work has included counting, observing, trapping, and following the movements of vultures and their avian competitors in Maasai Mara National Reserve. Trapping and tracking have proved the most complicated and exciting part of the research project. Trapping vultures typically involves getting down and dirty with carcasses. Small but strong nooses are attached to dead animals in preparation for the vultures' arrival. As birds fight with each other, they step into the small loops and get stuck.

in recent years. In addition to reducing the number of vulture meals, land use changes may also affect nest site availability.

So in collaboration with The Peregrine Fund and as part of my dissertation research at Princeton University, I have started studying this "Big Five." Though not the big five that are so sought after by tourists, and once upon a time by hunters, these five species of vultures (Lappet-faced vulture, White-headed vulture, African

Above: A pair of Lappet-faced vultures wait their turn near a carcass.

Below: White-headed vulture rests after a meal.

White-backed vulture, Ruppell's vulture, and Hooded vulture) and the accompanying avian scavengers serve just as important a role not only in the ecosystem, but also for tourism. Vultures consume more than 70% of the

The vulture research team is then able to grab the birds, a task that is sometimes easier said than done given these vultures can weigh more than 8 kg and have a beak designed for quickly tearing

In addition, vultures and other avian scavengers provide important ecosystem services of nutrient cycling and disease control through their carcass consumption.



meat available in the Serengeti-Mara ecosystem (Houston 1974). Without their clean-up services, the heavy carcass load that accompanies the wildebeest migration would appear as nothing more than a pile of rotting carcasses that would surely deter tourists. In addition, vultures and other avian scavengers provide important ecosystem services of nutrient cycling and disease control through their carcass consumption (Sekercioglu et al. 2004).

Conserving these scavengers is thus of the utmost importance for

meat from bone. We then fit the birds with backpacks containing a GSM-GPS unit. These units use the latest technology to retrieve GPS information from the travelling birds. Rather than using satellite signals, the units contain a SIM card just like a cell phone and information about the location is sent back to the researcher from the birds a few times a day by text message.

Thanks to the efforts of Munir Virani, Keith Bildstein, Simon Thomsett, Laila Bahaa-el-din, Wilson Masek, Kevin Markman, Ara Monadjem, Benson, and



Donald Kendall, we are now receiving texts from 14 vultures including Lappet-faced vultures, Ruppell's vultures, and African White-backed vultures. From these GPS units we get a glimpse of where the birds go, how quickly they travel, the altitudes at which they fly, and most importantly what habitats are essential for their survival.

Given the huge ranges of these species, we know they spend a lot of time outside protected areas. Knowing exactly where they go when they leave the Maasai Mara National Reserve and how much time they spend there will be critical for understanding why they are declining. With nearly nine months of data, we now know a lot about these birds.

From July to October, one of the tagged Ruppell's vultures made a 200+ km commute from Nairobi to the Maasai Mara every week, often travelling over 80 km/h and sometimes flying over 100 km in a single day. It appears to be nesting on a secluded cliff site just outside Nairobi. While it occasionally feeds in Nairobi National Park, the migratory wildebeest that move from Serengeti National Park to the Maasai Mara National Reserve are clearly an important food source for this vulture. Unexpectedly many of the African white-backed

vultures have spent time moving back and forth between Tsavo to the east and Maasai Mara, only occasionally checking on the wildebeest migration as it has moved through the Serengeti. One bird has even used an area of over 100,000 km² in the last nine months, demonstrating that areas needed by vultures to survive are vast and the risk of poisoning is high.

Much has changed in the Mara during the last 30 years. Despite extensive research on vultures in the 1970s, little is known about how these new human activities such as land use change and poisoning will affect vulture movement and behaviour. These initial declines provide evidence of the problems to come. Only by understanding the causes of these declines can we hope to conserve these amazing scavengers and the vital ecosystem services that they provide. ●

Above: Wing tags and GSM-GPS transmitters, like the ones on this Ruppell's vulture, will greatly improve our understanding of where these vultures go and what they need to survive.

HOW YOU CAN help!

Several vultures have been wing-tagged in the Maasai Mara National Reserve in order to track the movements of a larger number of vultures. If you see a vulture with a wing tag, please record the location (GPS or landmarks) and the number and colour of the tag and send the information to Munir Virani at tpf@africaonline.co.ke

Acknowledgments

This research is supported by Princeton University, The Peregrine Fund, Hawk Mountain Sanctuary, The Explorer's Club, and Africa-Eco Camps Ltd. Corinne would also like to thank the communities of Koiyaki and Siana, Narok City Council, Mara Triangle Conservancy, and Olare Orok Conservancy.

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CORINNE KENDALL is conducting her PhD studies at Princeton University, focusing on how human activities affect scavenger diversity, movement, and behaviour in the Greater Mara ecosystem. She is also a Research Associate at the National Museums of Kenya and her work is part of a larger collaboration with ongoing research by The Peregrine Fund. She is passionate about wildlife conservation and has been conducting field research on a variety of animals in Africa and elsewhere for the last six years.



Flowering mountain

BY DINO MARTINS



A tiny, dainty face peers out innocently from a bower of speckled leaves. While the light and shadows shift, sifted by myriad leaves and dewdrop prisms far above, here near the damp, fertile forest floor, all is still. The sunlight hangs in the air, as if undecided, before wafting down graciously giving succour to those creatures fastened to the lower reaches of the forest.

The forest stirs with the warming sun. Innumerable cold-blooded insects, aroused by the life-giving rays stretch out their many limbs, wings and various other bits in preparation for the day's work. Soft humming and

Above: View of Mt Elgon moorlands en route to the Koitoboss peak in Kenya with Giant Lobelias in flower.

Below Right: *Hebenstretia* - these dainty white flowers line the paths through the moorlands.

Pictures by: Dino Martins

buzzing, chirps and staccato whistles, cheeps and shrieks echo all around as the diurnal orchestra warms up.

Through this all, the tiny face peers out from a nook in the arms of an ancient giant that crashed over a decade ago onto the forest floor and now lies bequeathed to her forever, beneath a layer of moss, parallel fern rootlets and steadily chewing, digesting insect larvae. It is here, in this fertile microcosm, a clustered family of herbs thrives.

Their intricate flowers, held out singly or more rarely in twos and threes, are indeed tiny 'faces' looking out into the world. Patiently waiting, immobile save for a rare stirring of leaf by a passing buffalo, their lives last but a day. However, what they lack in longevity, they more than compensate for in resplendence.

Perfectly bilaterally symmetrical, these flowers give the impression of a pregnant hope, clasped expectantly in their soft petals, awaiting fulfilment. This design, as pleasing as it is to human eyes, is of course purely functional: a message to a potential pollinator - "Food here, come and get it, make sure you put your feet on these petals and place your head beneath the anthers before reaching for the nectar - thank you".

These flowers, dotting the carpet of herbs all along the edges of a fallen tree, are the quintessential 'Busy Lizzies', *Impatiens*, familiar to gardeners and plant-lovers the world over. Members of the balsam family, *Impatiens* are a familiar sight along forest paths and streams throughout Eastern Africa, and especially here on the forested flanks of Mt Elgon.

This particular 'Busy Lizzy' is formally tagged *Impatiens hochstetteri* by botanists. It shares the streamsidings of Elgon with the larger flowered species, *I. tinctoria* spp. *elegantissima* and *I. sodenii*,

whose white flowers are furiously probed by hawkmoths at dusk and more lazily visited by Green-Patch, Citrus and MacKinnon's Swallowtail butterflies during the day.

Straddling the Kenya-Uganda border, Mt Elgon is home to a fantastic array of wildlife including hundreds of species of wildflowers, some of which can be found on display at any time of year. This ancient mountain, some 24 million years old, is one of East Africa's 'sky islands' - isolated and evolving a distinct suite of species over millennia. Alongside the Cheranganis, Mt Kenya, Kilimanjaro and the Rwenzoris, these massifs, rising thousands of metres into the African sky, are hotspots of speciation and endemism.

Mt Elgon's unique biogeography - its cluster of distinct species, subspecies and varieties restricted to its flanks in distinctive zones - is reflected in its fabulous flora, which includes some of East Africa's rarest and loveliest plants. Some of these plants flower only occasionally and are rarely seen, even by botanists, such as the gorgeous ground orchid, *Eulophia montis-elgonis*. Others, like the subspecies of Giant Lobelia endemic to Mt Elgon,





Lobelia deckenii elgonensis, only flower periodically after spending many years slowly accumulating the energy reserves to do so.

Forest parks like Kenya's Mt Elgon National Park, are often somewhat frustrating for visitors given the fleeting glimpses of ungulate haunches as they vanish into the undergrowth. However, if you take a moment to look at flowers, no doubt you'll be enthralled by their beauty, and even better, they don't immediately slink off into the shadows – so you can watch them for as long as you like!

The forests, glades and grasslands of Mt Elgon, as well as the bamboo belt that girds the mountain, are home to a wide range of wildflowers including the familiar Busy-Lizzies, lazy pyjama lilies (*Crinum* spp.), lots of legumes, such as *Crotolaria*, and fields of gorgeous lupines. Much more famous for its elephant

caves, Mt Elgon is alongside Kakamega Forest, Saiwa Swamp and the Cherangani Hills, one of Western Kenya's best kept secrets. The paths leading to the caves are also good for spotting wildflowers including the sombre but striking striped-green spathes of the Jack-in-the-pulpit, *Arisaema milbraedi*. In the closely cropped grass of the path, look for tiny violets, with throats beautifully streaked - you might need to kneel and peer closely to truly appreciate their intricacy.

Above: Flowering Protea bush on the main track to Koitoboss at 12500 ft above sea level.

Insert: Blue-Green Delphinium growing in the heather zone - one of Mt Elgon's special floral treats.

Roadside verges and forest paths are also good places to spot the large-flowered *Solanum*, whose purple and yellow flowers are pollinated by fat carpenter bees. In the extra sunshine and run-off available here, wildflowers flourish including numerous legumes, most of them with yellow flowers. Shortly after the rains in the more rocky open areas, especially around elephant platform, are carpets of dainty rock-violets (*Craterostigma* spp.) and the intriguing lily, *Androcymbium melanthoides*.

But the true beauties of Elgon lie above the forest and bamboo. It is among the tussock grasses and heather of the moorlands that you will find some of the most remarkable and glorious of this mountain's flower children.

High above the plains and forests, upwards through the densely packed cathedral of bamboo and tangles of hardy



heather, juniper and podo, lies a magical world of bright, open skies above rolling moorland inhabited by some of the most bizarre and beautiful members of the vegetable kingdom. These are the high-altitude grasslands atop Mt Elgon that, together with similar habitats on Mt Kenya, the Aberdares, the Rwenzoris and Cherangani, make up a unique conglomeration of plants and animals specially adapted to living in the rarefied and extreme, Afro-Alpine zone.

Subjected both to extremely intense sunlight, due to the elevation (10,000 – 14,000 feet+) and freezing nights, the inhabitants of this special place need to be able to survive, in effect, freezing and thawing on a daily basis. Unlike the plants of the temperate zones where seasons come and go gradually, and plants adapt through cycles of growth and fecundity during spring and summer and dormancy in the winter, the flora of the Afro-Alpine zone is subject to the entire range

Above: Everlasting flowers (*Helichrysum spp.*) grow all over the mountain and retain their glorious shape and colour when dried.

Below Right: A Red-Hot Poker (*Kniphofia*) - these grow in boggy areas in the moorlands.

of these conditions within a single day!

Travelling up for an ascent of Mt Elgon from the Kenyan side of the mountain takes one up into the very heart of the gorgeous moorlands that stretch all the way to the massive, collapsed caldera that forms the great heart of the summit today. The highest points, the peaks, are formed by the jagged, weathered edges of the caldera's rim jutting some 14,400 feet into the sky. The wind and clouds dance here continually, shifting the temperatures between sublime and life-threatening in a matter of minutes, while the wind slices over worn rocky crags.

Greeting you as you enter the moorlands, where heather forms stands of small trees with gnarled trunks like so many knotted hands clasped together, are the lovely yellow blooms of *Hypericum*, and the glorious shining faces of the proteas (*Protea caffra*). The protea blossoms are loaded with sugary nectar and duly frequented by hordes of flies, ants, the odd tiny

solitary bee and noisy, querulous sunbirds.

Peeking out here and there from the tall grass are the exquisite gentle visages of the Blue-Green Delphiniums (*Delphinium macrocentron*). This flower, which often has 4-5 blooms clustered together at the end of a long stem, can be overlooked, but is well worth a few moments in admiration once encountered. My heartbeat always quickens when I pause to admire it – but perhaps it's just the low oxygen levels and exertion from the climb.

Much bolder and impossible to miss are the blazing spikes of the Red-Hot Poker, *Kniphofia thomsonii*, whose burnished erect red-yellow-orange flames are all the more attractive for the iridescent sunbirds who frequently probe their blossoms.

While the Delphiniums and Red-Hot Pokers typically grow singly here and there among the tussock grasses, the glorious Everlastings, *Helichrysum spp.*, members of the Daisy Family (*Compositae*), paint entire drab fields with smouldering colour. Named for their persistent flowers, that, true to their name, endure for many months even when the plant is long since wizened or dormant, the Everlastings are always there to cheer on tired hikers as they slog towards the peaks.





Straddling the Kenya-Uganda border, Mt Elgon is home to a fantastic array of wildlife, including hundreds of species of wildflowers, some of which can be found on display at any time of year.

Elgon's moorlands are home to several species of Everlasting including *Helichrysum meyeri-johannis*, *H. panduratum* and *H. formosissimum*, whose Latin names hint at the rhapsody of inspiration they provided to the botanists who named them! *H. amblyphyllum*, with white-pink flowers is endemic to Mt Elgon.

Less obvious from afar, but often equally densely flowered is the dainty *Cyonoglossum geometricum*, which is also found on many other hillsides and mountains in East Africa. The short, clustered flowers of *Hebenstretia angolensis*, splashed with orange, are also common alongside the buffalo-hoof pock-marked paths.

One thing that is striking about many of the flowers up here on the moorlands is their size – or the size of the plants that bear them. The Giant Groundsels, *Dendrosenecio* spp., tiny, inconspicuous weeds, everywhere else, are here transformed into

giants that tower above the other wildflowers. Sheaves of dry leaves clothe their short trunks providing some insulation against the frigid nights.

Even the thistles, plants that most would not spare a second glance elsewhere, are here rosettes of spiny, symmetric leaves topped with pretty purple blooms and the whole arrangement is so geometrically perfect that you cannot help but marvel.

But it is the Giant Lobelias, *Lobelia aberdarica*, *L. telekii* and *L. deckenii elgonensis*, bizarre and extravagant with their tall flowering spikes rising like solemn poles from the tussock meadows, that are unforgettable. Their whorls of leaves clasp open and closed every day to survive the cold, and their tissues are also laced with a potent mixture of toxins and anti-freeze.

Flowering in small numbers together like a family sprung magically from the ground, a field of these floral wonders is



Top right:

This is one of the many legumes that grow on the mountain and are pollinated by bees.

surely one of the most special treats that Mt Elgon has to offer. Standing in a field of flowers high up on Mt Elgon is a special and singular experience. The sweeping views over the moorlands and the world beyond give pause to think of our responsibilities to the planet in the face of rapid human-induced climate change. High-altitude floras are among the most threatened habitats today. These fields of flowers are but one canary singing out a clarion call to humankind. Will we listen? ●

Bottom left:

A carpet of Rock Violets (*Craterostigma*) on the Endebess Bluff.



DINO J. MARTINS is an environmentalist and biologist, currently a PhD fellow at Harvard University. Growing up in western Kenya, Mt Elgon was and remains a favourite place to visit. Dino works to highlight the links between nature and everyday human life and livelihoods.



Stealth and the city

The predator of Nairobi streets



2

- 1) A pair of Speckled Mousebirds sit precariously on a powerline gravely aware of the danger of being hunted
- 2) A Little Sparrowhawk watches intently for prey
- 3) Little Sparrowhawk takes off after prey
- 4) Little Sparrowhawk perches close to a transformer wire oblivious of the dangers of electrocution



3



4

BY MUNIR VIRANI

Every morning, as I sit in my office watching Nairobi's urban sprawl eat its way into the city's remaining green spaces, I can't help but smile. I ponder what will happen to the capital's vibrant birdlife over the next 10 years or so.

And then I see a ray of hope. All the chirping outside my balcony comes to a halt – there is pin-drop silence! A predator lurks. It comes in the form of a tiny stalking hunter. This is the Little Sparrowhawk – the avian equivalent of an urban stalking cheetah. Sparrowhawks and Goshawks are members of a group of specialized raptors called Accipiters. Larry, as I have nicknamed him, sits beside a lethal transformer, oblivious to the danger of getting electrocuted.

Each year, hundreds of thousands of birds are electrocuted by powerline structures when their wings touch live conductors. The risk of electrocution is significantly enhanced during the rains, as water is a good electrical conductor. But Larry is among the lucky ones. Like all Accipiters, he has a tiny frame with short, broad

wings and a long tail, for ease of manoeuvre.

Larry's wings are unlikely to touch two conductors at the same time. His mate however, might not be as lucky, as female birds of prey are larger than males (a phenomenon referred to as reversed sexual dimorphism). This is believed to be an evolutionary adaptation for territory-holding raptors to reduce competition between the sexes. Males hunt smaller agile prey, while females, that normally spend the early part of the breeding season defending the nest, can later help to hunt larger prey.

Nairobi is a great hotspot for Accipiters, mainly Black Sparrowhawks, African Goshawks and Little Sparrowhawks. They breed in tall Eucalypt trees and other exotics. They are a joy to watch especially early in the mornings and late in the evenings. Unfortunately, as the rate of building construction in Nairobi has reached a threshold level, these Accipiters are fast losing their man-made habitat.

Back to my office and there is a chaotic scurry of bird movement. I take a peep outside the window,

and Larry is back again on his perch – his head moving from side to side, scanning the area for potential prey.

And then, with lightning speed, he takes off. There is a chase, and wham! He has bagged a Speckled Mousebird. He hears his mate calling from the Eucalypt tree and Larry heads off with his prized quarry. He has to feed the female well in order to get her in prime breeding condition. Hopefully there should be some chicks in the coming months.

Meanwhile Larry is aloft again, flying to his favourite perch outside my office window. ●

DR MUNIR VIRANI directs the Africa and South Asia programmes for The Peregrine Fund, a US conservation organization dedicated to conserving birds of prey worldwide.

.....
www.peregrinefund.org



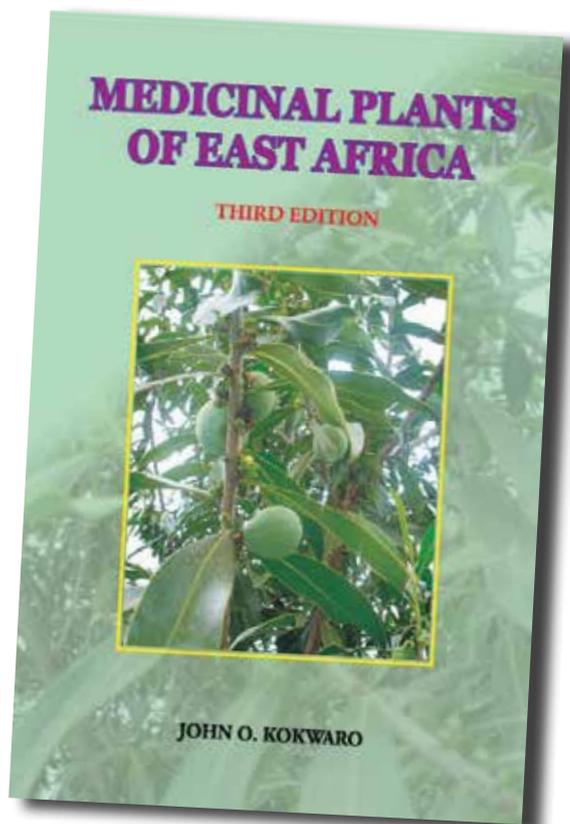
Medicinal plants of East Africa

The third edition of this classic book, first published in 1976, comes at a time of renewed interest and policy emphasis on herbal remedies, especially in Africa. The developed world may have moved on to modern medicine centuries ago but in sub-Saharan Africa it has been estimated by WHO that 60-80% of indigenous Africans still use herbal medicine for primary health care. East Africa (Kenya, Uganda and Tanzania) has a rich plant diversity of about 12,000 vascular plant taxa, and likewise a rich ethnic diversity of about 180 tribes.

This has resulted in a wealth of traditional herbal knowledge that has been transmitted orally for thousands of years. The author describes the traditional herbal uses of over 1,500 species as utilised by the different tribes in East Africa. Over 200 plants that are widely used for various treatments are illustrated in colour to help identification.

The front cover photo shows foliage and fruits of *Warburgia ugandensis*, taken from a tree planted by the then senator Barack Obama on 28 August 2006 in the grounds of the University of Nairobi main campus during a lecture visit.

There are two introductions: the first, to herbal remedies and the second to traditional medicine as practised primarily by East Africans. Part one of the main section deals with 'plant species and the diseases treated'. All similar plants (e.g. legumes) are grouped into their respective plant families. The new edition includes short remarks on how family members can be propagated. Part II on 'diseases and plant species used for treatment' classifies diseases into various groups and lists herbal species under each respective disease. Human diseases are listed first followed by ethno-veterinary medicine.



John O. Kokwaro

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Reviewed by
Siro Masinde

Finally there are indexes to vernacular and botanical names.

An issue that may be of concern is the protection of the intellectual property rights (IPR) of the communities that preserved this knowledge, and how they can share in any future profits in the event that drugs are discovered based on their knowledge. Much of Africa is at a critical stage where much of this knowledge is disappearing fast or getting distorted because it is not being faithfully passed on to the intellectually gifted and honest sons and daughters of these societies. The older people

with the knowledge are dying fast without passing it on. If we over-emphasise the protection of IPR without finding ways of documenting this knowledge and practice urgently, there may be nothing much left to document in a few years time. In addition, much of the environment has been undergoing accelerated degradation with the result that useful plants, especially medicinal plants, are becoming rarer. Some could be exterminated due to overexploitation and adverse climatic changes.

Knowledge and skills that are transmitted down the generations orally require intact traditional societies. The African reality is that there has been much disruption to traditional ways of life due to colonialism, competing new ways of life and religions, rural-urban migration and environmental degradation. In these circumstances, much of the traditional knowledge is not well passed on, or becomes distorted in the process of transmission. The proliferation of quack herbalists and the association of herbal medicine with sorcery and witchcraft, as well as the current commercialization, has often tainted herbal practice. Many African countries have no policies to incorporate herbal practice as an alternative form of medicine to be administered alongside Western medicine and practice. These are some of the major factors that severely affect the development of herbal medicine in Africa.

The author has over 40 years of experience in plant science with special focus on plant taxonomy. The book is therefore grounded in sound field and theoretical research and is clearly and accurately presented in a simple manner. I highly recommend this book to anyone interested in medicinal plants since it is a classic work that will be useful for many years to come. ●

SIRO MASINDE

East African Herbarium, National Museums of Kenya
Box 45166, 00100 Nairobi - Kenya
siromasinde@hotmail.com



In search of the african wild dog

Roger and Pat De la Harpe are based in the KwaZulu-Natal Midlands from where they travel around South Africa and neighbouring countries taking pictures and writing. Their work has been published in diverse publications such as Africa Geographic, Getaway, BBC Wildlife, Geo and National Geographic.

In this wonderfully photographed and narrated book they take us on a journey through the South African national parks and conservation areas *In search of the African Wild Dog* is their 19th book and it joins a library that includes *The Big Cats of Mala Mala, Zulu, Top Touring Spots of South Africa and Tuli – Land of Giants*.

Roger and Pat give us a glimpse into the intricate nature of dog packs, and how their survival depends on the dogs' ability to function as a pack. They point us to the devastation that can result from the loss of the dominant, or alpha, pair of dogs and the resultant lack of coordination in the hunt.

This is, however, not a natural history book. It is a journey through the conservation history of the dog. From its place in the folklore of the traditional San Bushmen, the Zulu, Shangan, and Venda people to the persecution by advancing European colonialists. One thing emerges right from the start of this book: the wild dog has been vilified since its first contact with man. In traditional African folklore, its efficient, albeit ruthless-looking killing method, is - in most cases - seen as evil. The wild dog is however admired by some for its speed and agility in hunting.

The arrival of the European settlers into South Africa compounded the persecution of this species. "For many years they were classified as vermin by provincial administrations in South Africa and rewards were

offered for their elimination..." the book says.

Today, an estimated 5,000 African Wild Dogs exist in Africa. Despite surviving the persecution of the 19th and early 20th centuries, the wild dog is not out of danger yet. "A new and ugly phenomenon has raised its head - over the past five years a growing, unregulated trade in wild dogs with the East is further depleting their numbers by some 100 dogs a year, which could impact negatively on the species." "Even in South Africa where consumptive utilisation of wildlife is legal, this atrocious trade is purely for profit and has no conservation value whatsoever.

The dogs are being caged in "awful" conditions for the amusement of passing tourists. In South Africa - the setting of this book - only 500 of these dogs

remain and this is a number that shows significant recovery. The book delves into the conservation efforts that are being made to bring back the dogs from the brink of extinction. What stands out is the exceptional photography. Apart from the wild dog pictures, there are also well taken pictures of other charismatic wildlife including one of a brown hyena - a nocturnal animal hard to come by during the day.

This book is a deserved addition to the efforts to dispel the animal's undeserved reputation as a ruthless brute and vermin - and perhaps it will aid its future survival. ●

BY: ROGER AND PAT DE LA HARPE

Published in 2009

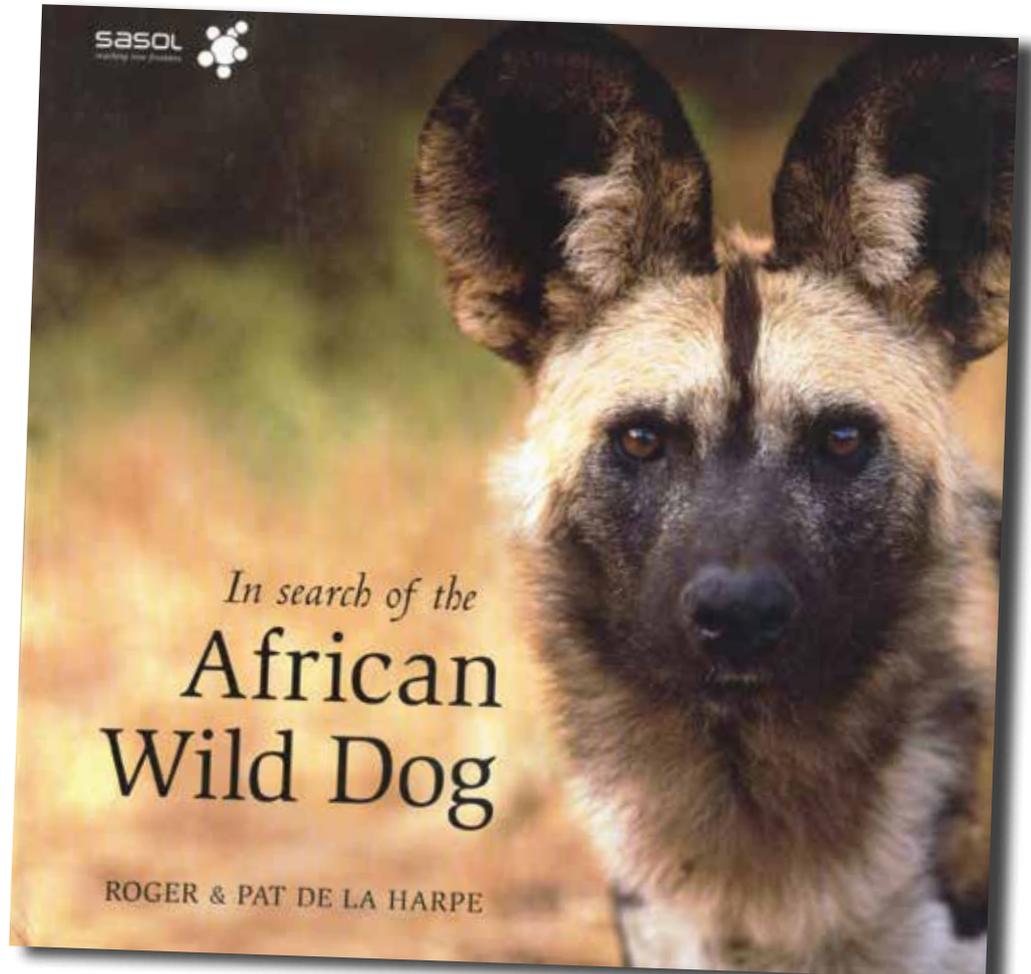
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Communications Officer, Wildlife Direct





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East African Wild Life Society



Meet Ella, the stress-free rhino truck

BY ELODIE A. SAMPÉRÉ

Capturing and translocating rhinos has suddenly become a lot easier, thanks to a generous donation from David Thornes of Ladyroyd Garage and John Green of Rydam Universal Ltd.

David and John recently shipped a state-of-the-art truck to the Ol Pejeta Conservancy from Leeds, England, to assist future translocations of Kenya's rhino population. A one-of-a-kind machine! Translocation is very expensive and Ol Pejeta is currently setting up a special fund to help cover the cost of all translocations throughout the country.

About a year ago, David was sitting at home watching a documentary on rhino translocation featuring Ol Pejeta.

Above: David Thornes hands over the truck to the British Army who helped transport Ella from England to Kenya.

Insert: At a recent rhino translocation on Ol Pejeta, Ella was put to the test.

A haulage expert, David wanted to make translocation and transport of rhinos a lot easier. He decided to design a truck, which would help move these animals and cause them less stress. His truck is air-conditioned and has enough padding to ensure the rhinos travel much more comfortably.

David and his partner John named their truck "Ella", after David's daughter. It was shipped to Kenya with the Tusk Trust and British Army providing help and donations.

In the first week of April, David, John and their families came to Ol Pejeta to help train the staff in the use of the truck, and to participate in a translocation exercise. The truck overcame every challenge the African bush threw at it. Wildlife & Security

Manager of Ol Pejeta Batian Craig said they would never have been able to achieve this move in such a tight timeframe had it not been for "Ella". ●

ELODIE SAMPÉRÉ has served as Lewa's Head of Conservation Marketing since August 2008. Before joining the Lewa Wildlife Conservancy, she served as the director of marketing for the African Wildlife Foundation. She now spends her time between Lewa, Ol Pejeta Conservancy and the Northern Rangelands Trust.