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**Eunice** on: +254 (0) 720 200 860 **E.** [eunice@eawildlife.org](mailto:eunice@eawildlife.org) or

**Gideon** on: +254 (0) 720 369432 **E.** [gbett@eawildlife.org](mailto:gbett@eawildlife.org)

email: [info@eawildlife.org](mailto:info@eawildlife.org)

[www.eawildlife.org](http://www.eawildlife.org)

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COVER PHOTO: FISH EAGLE AND 2 STEPPE EAGLES  
Photo: © Paolo Torchio



THE EAST AFRICAN  
WILD LIFE SOCIETY

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

**Editor**  
Andy Hill

**Editorial Board**  
Nigel Hunter, Michael Gachanja,  
Esmond Martin, William Pike, Paolo  
Torchio, Patricia Kameri-Mbote,  
Mordecai Ogada, Lucy Waruingi

**Design & Layout**  
George Okello

**Circulation and Subscriptions**  
Rose Chemweno

**Advertising / Sales**  
Gideon Bett

**SWARA Offices**  
Riara Road, off Ngong Road,  
Kilimani, Nairobi

P O Box 20110-00200 Nairobi, Kenya

Tel: + 254 (20) 3874145  
Fax: + 254 (20) 3870335  
E-mail: [info@eawildlife.org](mailto:info@eawildlife.org)

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Chas G Allen Jr, M Bishop, Mr & Mrs H E  
Rocoveri, James H Webb

### EAWLS HEAD OFFICE

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

Members are requested to address any  
queries to the Executive Director  
[info@eawildlife.org](mailto:info@eawildlife.org)

Letters to the Editor: [swaraeditor@gmail.com](mailto:swaraeditor@gmail.com)



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receives from Fauna and Flora International

## 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  
Zugsplatzstr. 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 Gärd  
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](http://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 Taurinc Pl. NW  
Bainbridge Island  
WA 98110

### Charles Kasinga

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



**D**o Africans care about their wild life and environment? Or is it just a playground for the foreign visitor with knock-on bonuses for the hotel and lodge industry, plus a windfall for the tax coffers? Mordechai Ogada, in typically trenchant style, reminds us in his Opinion contribution that the Victorian “zoo” model is outdated and argues for a more enlightened and modern approach to sharing nature between man (and woman) and beast. At the heart of his beliefs is a plea for

Africans to take more “ownership” of their environment, something that the late Wangari Maathai would have approved of. She is remembered in this issue by the award-winning “Bee-man” Dino Martins, while his sister-in-eco-arms, Paula Kahumbu, updates us on the real threat of poisons and how Kenyan government interest might light the way for other African governments to halt this menace. Our Executive Director Nigel Hunter, whose safari boots have dust on them from Botswana through Tanzania to Uganda and Kenya and beyond, looks at the whole notion of communities getting some benefit from natural resources.

Our partners and allies in the Tanzania Natural Resource Forum have provided us with a stock-take of how our neighbour’s natural resources are faring in the early part of the 21st century. It makes good reading and we would encourage you to follow their activities on [www.tnrf.org](http://www.tnrf.org).

There is much more in this first issue of 2012 too, including Felix Patton’s intrepid quest for rhinos in Zambia and an interview from Uganda with Richard

Wrangham, the American chimpanzee expert.

Regular readers will know that we try to provide as much regional coverage as we can. We are, after all, the magazine of the East African Wild Life Society. For the first time in many years SWARA is now being distributed in Tanzania and Uganda and we welcome readers there. You join a growing band of supporters throughout the Africa, Europe and America.

Our hope for 2012 is that there will be more readers of the magazine, recipients of the EAWLS bi-monthly newsletter and members of the society. Our advocacy is only as strong as our resources, and we know that the most important resource in our armoury is the growing body of people who care about the sound governance of our habitat. Please give someone EAWLS membership this year, and help us even more than you do now.

A green, prosperous and peaceful 2012 to you all. ●

**Andy Hill**  
Editor



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## LETTERS TO THE EDITOR





*Focus with Michele Burgess*  
Extraordinary Adventures in Exotic Destinations

Hon. Najib Balala  
Minister, MP  
Ministry of Tourism  
PO Box 30027  
Nairobi, Kenya

July 1, 2011

**RE: MAASAI CATTLE IN THE MAASAI MARA RESERVE:**

Dear Mr. Balala,

Last month I took a group of 20 people on safari in the Maasai Mara. I was horrified to find Maasai cattle being brought into the reserve under cover of darkness to graze in the area of the Musiara marsh. In the enclosed photos, taken the morning of 21 June after two nights of heavy rain, you can see the devastation caused by thousands of cattle hooves pounding the mud to mush. There is extensive damage all the way down the hill from Koiyaki and into the marsh, through pools where hippos lie up during the day, through prime habitat for lions, reedbuck, waterbuck, and wading birds. Torches of Maasai herdsman were seen in the marsh after dark, and a Maasai throwing stick, used to chase elephants away, was found there as well.

There were fewer than ten elephants in the area this year, compared to large herds seen in the 20 years I've been coming to the Mara. Giraffes, usually plentiful, were nowhere to be found except a couple deep in the forest near the river. All had been driven away by cattle and Maasai herdsman. We had to travel some distance from camp to find herds of antelope, because the cattle have overgrazed the marsh area and inside the reserve boundaries along the main road from the Musiara Gate.

At noon on 18 June, I observed two huge groups of Maasai cattle amassed at the border by the windmill and another two by Musiara Gate, waiting to cross into the reserve after dark. They were clearly in view of rangers manning the gate, some of whom are Maasai and known to own cattle themselves. These are the same rangers who harass Governors' Camp drivers when they drive off-road or inadvertently stray into Koiyaki. Thousands of cattle overgrazing the reserve and trampling the grassland cause far more damage than any vehicles occasionally driving off-road.

Tourists observed two lions eating a dead cow inside the reserve, and heard of another incident that occurred the previous day. Maasai cattle in the reserve at night makes them easy prey for lions, which will inevitably result in retaliation and the death of lions that are, in fact, on land supposedly reserved for their use.

10794 Cotnamston Lane, Huntington Beach, CA 92640 • (714) 530-0104 • fax (714) 530-0978  
maling5820@aol.com • www.infocentrals.com

**Dear SWARA,**

As a member of the EAWLS I am getting very depressed, in fact dreading the SWARA magazine arriving. I've got to the stage where I am expecting very negative reporting. I have very recently visited Kenya, I saw some very positive things and came across tourists who had visited the game parks and been thrilled with what they had seen. I have friends here in Australia who see the magazine and wonder why anyone visits Kenya, given the negativity of the magazine. For the sake of my sanity please try and put at least something positive - otherwise I might as well cease to be a member.

I am person, born and bred in Kenya, return frequently, and I would not go if I didn't see something positive. I think an article on population growth and the current mood to do something would be more positive.

In my opinion Kenya should never have stopped

Maasai Cattle in the Maasai Mara Reserve  
July 1, 2011  
Page 2

Since there is no drought here, there is no reason for cattle to be grazing inside the reserve. If there isn't enough grass to feed their cattle, the Maasai need to keep fewer cattle so they can adequately graze on their own land, not in the reserve. Or use feed lots away from the reserve boundaries. Why are there no consequences for such an incursion? Are fines being levied, cattle being confiscated? Tourists pay exorbitant park fees (now \$70 per day) and are restricted to the reserve. If they venture into Koiyaki to track big cats, they must pay an additional \$80 daily fee, yet cattle graze in the reserve and frighten away its wildlife — which tourists are paying to see — without penalty.

If this continues, Maasai cattle will overgraze all the grassland in the area of Governors' Camp and beyond, leaving nothing for the wildebeests and zebras to eat when the migration comes — if it comes. Why would the grazers come at all if there's nothing to eat? They'll stay on the other side of the river, making it impossible for tourists to see the migration without going to the other side. Many tourism-related jobs will be imperiled. One of the wonders of the natural world will be ruined. All because nobody is paying attention. Kenya can't afford to jeopardize much-needed tourism dollars, the world can't afford the loss of the Maasai Mara and the annual wildebeest migration. It needs to be preserved for future generations.

Sincerely,

Enclosures: 4 photos

Michele Burgess, Tour Leader  
Travel & Wildlife Photographer

cc: Kenya Wildlife Service  
County Council of Narok  
Kenya Tourist Board  
Swara Magazine  
BBC Wildlife Magazine  
Ari Grammaticas, Governors' Camp  
Discover Kenya Safaris

professional hunting. At least when there were hunting blocks people were able to observe what was going on - nowadays it seems it is all too hard for the authorities.

I look forward to a more positive edition in the future. ●

**Charles S Kerfoot**  
**337 Balmoral Road**  
**JARRAHDAL West Australia 6124**

## REPLY FROM EDITOR

Sorry you find SWARA depressing. You seem to be in a very small minority given the steady rise in sales, especially on newsstands, over the past two years and the general tenor of feedback we receive. We try to balance the positive with the less so but the articles are the views of a Who's Who of the conservation world, not our own.

Flicking through recent issues on the shelf behind me I can see a wealth of positive news, from the salvation of the Angolan Giant Sable to the fencing of Kenya's Aberdares and the creation of Beach Management Units at the Kenyan coast, not to mention income-generating initiatives in Madagascar and the training of park rangers in South Sudan.

In the current issue you are about to read (or not) you'll find a good mix of positive and negative developments too, from Zambia to the Seychelles to the Taita hills. As for hunting, we asked an expert to write it up for us: see Economics of Trophy Hunting in Africa - SWARA 2010:04). I'm not sure an article on population growth would raise the spirits. Most likely the opposite. ●

**AJH**

## Uganda, Tanzania and China in huge rail link plan

Uganda and Tanzania have signed a joint \$450 million agreement with the China Civil Engineering Construction Company (CCECC) to conduct a feasibility study for a new proposed railway from the Tanzanian port of Tanga port to Musoma, on the shores of Lake Victoria and then to Uganda. Uganda plans to build a new port on its side of Lake Victoria to connect with a new railway ferry link to Musoma. Uganda and Tanzania have also signed a Memorandum of Understanding worth over \$3 billion for the construction of the railway line and development of the three ports.

“We hope implementation will start very soon and that the feasibility study will take between three and six months and the project completed by 2015,” Tanzania’s Minister of Transport, Omar Nundu, was quoted as saying. The minister described improved infrastructure as instrumental in promoting East African Community (EAC) economic integration.

His Ugandan counterpart, Chebrat Slepther, said there could be no development without transport. “The most interesting part of this project is that it would reduce congestion at Mombasa port. Residents and traders from Tanzania or Uganda will not have to worry about wasting time in long queues waiting to offload or load their good now, there are many options,” he said.

Uganda currently depends almost entirely on Kenya’s congested Mombasa port for its imports and exports. Tanzania and Uganda have agreed that a proposed joint rail track from Tanga to Arusha and Musoma and onward to Kampala, would not cut through the Serengeti national park, ending months of speculation and conservation concern.

The line to link Tanga and the Lake Victoria side dock of Port Bell close to Kampala via Musoma port, would route nearly 100 km south of the Serengeti to protect the ecosystem, Nundu said.

Transportation minister Omar Nundu told Tanzania’s Guardian on Sunday that the railway line will not touch the Serengeti Park. “Rest assured that the railway line will be constructed 100km south of the Serengeti National Park’s sprawling expanse,” Nundu declared. ●

## Kenya’s first easement expands Nairobi park

Nairobi National Park has been expanded by more than 100 acres through the signing of Kenya’s first voluntary easement deal. To counter the alarming decline of wildlife and habitat due to development and land fragmentation, Mr. John Keen, 86, and his family have protected their land through the conveyance of an environmental easement to the African Wildlife Foundation (AWF) and Kenya Wildlife Service (KWS).

An easement is a voluntary agreement that restricts certain uses of the land in order to keep it open for wildlife. The Keens retain full ownership of the land, but are subject to the restrictions agreed upon between the land owner and the holder of the easement.

Keen’s land is adjacent to Nairobi National Park and the execution of a voluntary environmental easement adds over 100 hectares of habitat. Nairobi National Park, one of Kenya’s most visited parks, is dependent upon the open lands to the south for wildlife movement, habitat and dispersal. These private lands have become increasingly threatened by land sales, land conversion and habitat fragmentation, putting the entire Park at risk.

“I want this land to remain pristine today and in the future for wildlife and future generations,” said Keen. “We have destroyed so much of our land and wildlife, it is time to save this country of ours!” The agreement was signed at a ceremony at Masai Lodge, which is owned and operated by the Keen Family. It was attended by the Keen Family, Dr. Helen Gichohi, President of the African Wildlife Foundation, Mr. Julius



KWS director Mr Julius Kipng’etich, Mr John Keen and Dr. Helen Gichohi, President of the African Wildlife Foundation

Kipng’etich, Director of Kenya Wildlife Service, Erna Kerst, Director of USAID and AWF, KWS and USAID staff.

“Kenya’s national parks, sanctuaries, and reserves safeguard roughly eight per cent of the country’s land for wildlife habitat, but these protected areas are small to support viable populations of wildlife and not connected,” said Gichohi. “To secure Kenya’s remaining wild places, we need creative solutions like easements.”

“The value of the property under easement will increase tremendously in coming years and change the fortunes of the Keen family while contributing to conservation for posterity. Wildlife conservation is not about competition; it’s about partnerships and cooperation for the benefit of all,” said Kipng’etich.

“Environmental easements have proven highly effective in other parts of the world, and we believe that they have great potential to be equally successful in Kenya,” said Kathleen H. Fitzgerald, Director for Land, AWF. “We applaud the Keen family for their decision to place their land under an environmental easement and hope that their conservation leadership will inspire other landowners to do the same.” ●

Ajh

We try to bring readers, especially overseas, a roundup of the latest conservation news affecting the region. Space is limited by the range of features we try to include in SWARA, and, as a quarterly, news is often out of date between the editor’s laptop and the news stand. For more up to date briefings please read our bi-monthly newsletter, which is sent to EAWLS members and the conservation and Safari trade and is also available on our website: [www.eawildlife.org](http://www.eawildlife.org) and check out the EAWLS Facebook page too.

# Trans-boundary challenges in wildlife conservation

While the East African Wildlife Society focuses on conservation in specific countries in East Africa, it is greatly concerned with the broader trans-boundary issues that need to be urgently addressed. There are a number of major issues of a trans-boundary and regional nature where national wildlife conservation policies and legislation, or the lack of their implementation, pose serious threats conservation. In previous articles I have addressed the alarming levels of wildlife poaching in East African countries including Kenya and Tanzania. Poaching and illegal trade in wildlife products has become a major challenge with sophisticated cartels moving poached illegal products across countries. Large consignments of elephant tusks have recently been impounded in East Asian countries with documentation of origin as Kenya, but presumably the product of poaching in other African countries. Apparently, the cartels have acquired the sophistication that beats controls under CITES and its TRAFFIC mechanism.

The central problem is that, while countries in the region are already party to several multilateral environmental agreements (MEAs), sub-regional protocols and project-based bilateral instruments, nothing much is being implemented within individual countries because the agreements and instruments have not been "internalised" in country policies and legislation. In many cases, the countries become party to agreements, with good intentions, and then fail in follow-up country actions largely due to lack of technical capacity. Furthermore, there is need for the countries to collectively address issues of orderly international trade, and particularly how to reduce illegal trade in products (e.g. bush meat, elephant tusks in timber, charcoal, rosewood, blackwood, wild orchids etc.). Regional economic bodies, such as

the East African Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA) should take the lead in harmonising and preventing illegal trade plant and animal products.

There are other important trans-boundary wildlife conservation issues to be addressed. Neighbouring countries share ecosystems for major wildlife heritage. For example, the role of forests in cross-boundary hydrological conditions, is becoming more critical as water supply within large "watersheds" such as the Nile, Zambezi and Limpopo Rivers, the Lake Victoria Basin, the Songue River Catchment, and the Okavango Basin programmes, the Mau Forest Complex etc. In all these cases, destabilisation of ecosystem in one country significantly alters the survival chances of wildlife on neighbouring countries.

In some cases, trans-boundary forests and woodlands are degraded through settlements of large numbers of refugees. For example, forests and woodlands in the Kagera River Basin, which rises in Burundi and flows through Rwanda, Uganda and Tanzania into Lake Victoria, are facing increasing pressures and degradation as a result of sudden and big increases in population, mainly refugees, often relying on unsustainable land use and natural resources management practices. The basin's land and freshwater resource base, and its associated biodiversity, are threatened by a declining productive capacity of cropland, rangeland and forests.

Then there is the long tradition of managing Trans Frontier Conservation Areas (TFCA) and wildlife corridors, particularly in Southern Africa, e.g. the Kavango-Zambezi (KAZA) Park straddling Angola, Botswana, Namibia, Zambia and Zimbabwe, Greater Limpopo, Malawi-Zambia and mid-Zambezi-Luangwa areas. In East Africa there is the Mountain Gorilla Project

between Uganda and Rwanda. The managed resources in all these cases are focussing on the wildlife – there are very few, if any, cases where the forest and tree trans-boundary resources per se are the focus of management, even if there are many places where joint management of forest resources shared by two or more countries would be relevant and justified. Future actions are needed to strengthen the functioning of TFCAs. Furthermore, there is need to understand and to sustain ecological linkages between forests and national parks and wildlife reserves in all the countries.

However, in the recent past, neighbouring countries have pursued conflicting developments which threaten the functioning of TFCAs. For example, we have just witnessed a high level stand-off between governments and conservation groups in Kenya and Tanzania over a proposed road construction within Tanzania's Serengeti National Park which would have seriously affected the spectacular annual wildlife migration between Kenya and Tanzania. While the present administration in Tanzania appears to have shelved the road construction plans, there are no safeguards that future administrations will not revive the development. Clearly, such cases require more formal commitments under sound sub-regional agreements which can work for wildlife conservation into the long-term future. In this regard, it is commendable that the EAC is already addressing policy and legislation imperatives for trans-boundary management of natural resources.

The East Africa Wild Life Society offers it expertise and knowledge in the ongoing EAC efforts. ●

**Fredrick Owino**  
Chairman EAWLS





# Much to expect in East African conservation in 2012

**This could be a significant year for conservation and the EAWLS role in it across East Africa. Let me detail some of the challenges ahead:**

**KENYA**

2012 could, even should, prove to be a very significant year for Kenya. The reform process continues but it is not a straightforward, plain-sailing happening. Let us look at a couple of issues:

**1. LAND**

Kenyans who voted for the constitution believed they were voting for significant land reform. They believe that the new constitution removes from Government control anything to do with issuing land titles, sanctioning land transactions, and registering land. They care desperately that

this should happen, because corrupt land grabbing often aided and abetted by civil servants in the Ministry of Lands has seriously undermined the sanctity of land transactions as a basic premise of transparency, accountability and democracy.

The institution set up by the constitution is the National Land Commission, which was meant to be established almost immediately the constitution was promulgated. Yet here we are nearly 18 months later and we still do not have a National Land Commission Act in place. This is largely due to a tug of war going on in the drafting of the Act by the Ministry of Lands, which fears that its future is threatened because, lets face it, the majority of us feel there is no need for a Ministry of Lands, except as a small policy unit, which is not how the Ministry see it. The other significant element is the replacement of 'trust land' by

'community land'. Trust land was so called, because local councils held such land on trust for local communities. Alas in the majority of cases, Councils rarely honoured their role as trustees and would frequently lease 'communal land' for a nice inducement. This often gave rise to the privatisation of community land. It has still not really sunk into the Government's mind how significant this change is and how great the need is to create a breathing space by freezing transactions on community land. This has led to an escalation of land grabbing, particularly in counties such as Lamu.

**2. COUNTY GOVERNMENTS**

This major change to the way Kenya will be governed brings new concerns regarding natural resource management. Counties will have their own legislature and ability to make decisions regarding development and resource



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management within their counties. There are 42 counties. It has been a tough road getting improved transparency and accountability into natural resource management at a national level. Emulating this approach with 42 counties is going to be a daunting challenge, but one that we have to face. The Society has just been awarded a project to address this need in four counties as a start. 2012 will be significant in monitoring how this project succeeds.

**TANZANIA AND UGANDA 2012 should also be the year for cementing our ties with these two countries.**

**3. TANZANIA**

Our current partnership with the

Tanzanian Natural Resources Forum (TNRF) is based on a cross border project looking at the illegal movement of timber across that frontier. A report highlighting the findings should be ready in March. In January we will be visiting Arusha to explore and discuss other areas of collaboration

**4. UGANDA**

Last month the Society and the Uganda Wildlife Society (UWS) signed a MoU for collaboration. The need now is to meet UWS and again explore and discuss how we can get our collaboration started and active.

Let me end by returning to Kenya. 2012 should be the year of a general election. We are not sure whether

this election will be held in August, as set out in the Constitution, or will be in December, if an amendment to the constitution succeeds. I am convinced a great majority of Kenyans would like to see the August date prevail, notwithstanding the technical arguments being promulgated for the December date. But what all of us wish and ardently desire is that the election is peaceful, fair, transparent and has a clear outcome. ●

On that note may I wish you all a happy and successful new year.

**Nigel Hunter**  
**Executive Director**



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# Conservation

## conversations

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BY MORDECAI OGADA

**I**t is a well-acknowledged fact that conservation is a people problem, yet in Kenya we resolutely practice our conservation in the manner of 'preservation' – the Victorian game-keeper model that was first visited upon us by the colonial authorities.

First it attempted to preserve the wildlife from poaching by the 'natives' so that the 'sportsmen' could shoot them for pleasure and have their trophies mounted. That era obviously ended a long time ago, but the mentalities that were developed then persist to this day, much to the detriment of conservation practice in this country. They manifest today in all sorts of ways e.g. calls to cull hyenas in certain areas 'because they are killing baby rhinos' or to cull lions in certain areas 'to save Grevy's zebras', the creation of 'sanctuaries' where the wealthy can keep wild animals in enclosures on their land for their pleasure, the 'saving' of an elephant calf that may have been killed by lions after separation from the herd.

I use the word 'preservation' here in the context of fruit vacuum-packed in a jar to make jam, and this cannot work with living systems and species. It is narrowness of thought that makes someone think about a rhino calf being killed and not the hyena cubs that will share in that meal, or an elephant calf/Grevy's zebra being killed and not the lion cubs being raised on that meat.

When we build an enclosure round a herd of Hirola to 'protect' them from predators like wild dog, why don't we remember the fascinating possibility that the wild dog pack may have run 80km to get there, kill one eat it, and run back 80km to the den with full bellies to regurgitate meat for the alpha female and little pups? This, friends is what the 'wild' in 'wildlife' means. We cannot keep living systems in 'glass boxes' and say we are conserving them.

There is a lament I must make as a conservation practitioner – ours is the only professional field that people enter as a form of self actualization, so the skills that people develop over years of experience in education and practice have to do battle with opinions expressed by bankers, doctors, lawyers, political leaders etc (with all due respect to these professions) who are now 'conservationists'. Many a time, we lose out because the self actualization group are always very prominent members of society with a lot of 'pull' in all spheres of life.

The preservation attempts that are going on right now are targeted at retaining the status quo, i.e. the tourism products on sale, the profits, competitive edge, etc. Banking in Kenya for example, has changed beyond recognition in the last 15 years, but what about tourism and conservation? You see tour and safari companies

offering what they offered 40 years ago (some actually use this fact in promotional materials!) You see the Minister for tourism trying to double arrival numbers, yet we aren't offering anything new. Kenya is a wonderful country, but the fact is repeat visitors come because they love this land, not because they expect anything new. You also see wildlife conservation practices that should have been consigned to history years ago.

What is it that ails us? Simple- we are not talking! Conservationists (me included) have their dialogues in exclusive clubs while the "hoi-polloi" who do most of the poaching, deforestation and pollution go without knowledge. We conservation biologists publish wonderful works in international journals that never reach our shores, but never think to write their findings in our local dailies. The disconnects are numerous. Why, for example, does KWS have a fully fledged corporate communications office, but no similar office to dispense information on conservation issues, successes and challenges?

Ours is a field divided into camps that snipe at each other, point fingers and only grudgingly come together when it is inescapable, and often when it's too late to solve the problem at hand. The net result of this is a limited field of vision that is sometimes

**THERE IS A LAMENT I MUST MAKE AS A CONSERVATION PRACTITIONER – OURS IS THE ONLY PROFESSIONAL FIELD THAT PEOPLE ENTER AS A FORM OF SELF ACTUALIZATION, SO THE SKILLS THAT PEOPLE DEVELOP OVER YEARS OF EXPERIENCE IN EDUCATION AND PRACTICE HAVE TO DO BATTLE WITH OPINIONS EXPRESSED BY BANKERS, DOCTORS, LAWYERS, POLITICAL LEADERS ETC (WITH ALL DUE RESPECT TO THESE PROFESSIONS) WHO ARE NOW ‘CONSERVATIONISTS’.**

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stunning in its narrowness. We have ‘conservationists’ who pay monetary compensation to people in one locality for livestock depredation thinking that it will have no effect whatsoever on human-carnivore coexistence in other parts of the country.

Here is a major ‘elephant’ in the conservation ‘room’ that I have spoken about, and must mention again: consumptive use of wildlife, i.e. cropping for various purposes and sport hunting. This is talked about in low grumbling tones in cars, homes, clubs and other forums. Some people want it reintroduced in certain areas of the country, based on the fact that there are good, stable (some say growing) populations of certain species. Furthermore, they say there are adequate security, monitoring and management measures in place for sport hunting, and there is no reason to doubt that any of this is true. However, how about the question of socio-political impacts? How will KWS arrest local poachers killing a Grants gazelle for meat to feed their children when a wealthy foreigner is shooting buffalo for fun in another part of the country? It frightens me to even think what politicians from the areas near parks would do or say once they took up this ‘cause’. I can just hear them say “I will mobilize my people to kill all elephants...”

There is a lot of talk and even a trip sometime in the past to South Africa by MPs to see proof of how sport hunting is successfully done there. I do not dispute that they are doing it successfully (if

profit is the only measure thereof), but we miss the most important factor. The years of apartheid have put in place the structures on the ground and in people’s minds that prevent all the socio-political impacts that Kenya would have. This is a fact we cannot (and should not) try to escape. One place where sport hunting works well is in the US, but over there it is an activity of ‘the people’, not foreigners, or the elite. Every Tom Dick and Harry has his gun at home or in the back of his truck and takes it out when the deer season starts. I have never once heard of a foreigner going on a hunting Safari to the US. There must be some, but I think they are very few.

In Africa, they are ALL foreign. In Kenya, we cannot get gun licenses (generally speaking) and most of us live our whole lives and die without ever touching a firearm (unless, of course you go through the police, army, KWS, parliament, prisons, crime, extreme wealth...). We should probably also talk to the security agencies about sport hunting and hear their take on it, because a load of rich people with high quality weapons and ammunition may well be a strong incentive for criminals to target safari vehicles out on a hunting trip to Marsabit, for example.

We in the conservation field must open our eyes and ears if we are to move forward. If there was effective dialogue between ecologists and ‘conservationists’ there wouldn’t be any in the year 2012(!) who think a species can be saved by rounding them up into a predator proof fenced area, because the latest big ecological finding is that

habitat fragmentation is the greatest challenge to conservation of many endangered species.

I was stunned when I was asked at a recent talk why KWS insists on keeping Ruma National park, despite the poverty of the people living around it and the fact that it isn’t profitable. Well, if they de-gazetted it and ‘gave it to the people’ I can just see the ensuing chaos as poor landless people converge on and grab all our parks, including the ‘rich landless’ who will expand Karen into Nairobi National Park and Milimani into Kisumu’s Impala Sanctuary until we have nothing left. Of course, none of this is apparent if you just look at Ruma Park and the poor people in Gwassu and Sindo.

Until we in the conservation field can have the courage to step out of our niches and comfort zones, our natural heritage will be at the mercy of our bickering, self interests and short term vision. This is the most important point of this article, and the reason why an animal ecologist is writing freely about politics, sociology and economics. Conservation is about all these things and for too long conservation biologists have been trying to study it separately from these other disciplines. This may have been appropriate practice back in the 1960s and it resulted in definitive works like ‘The African Buffalo’ (Anthony Sinclair) ‘The Serengeti Lion’ (George Schaller) and ‘The Spotted hyena’ (Hans Kruuk). However, today research that doesn’t look at human dimensions is simply not useful. Without a change of direction, we will definitely not succeed in conservation, which by definition is a long term pursuit.

I may be proven wrong in my opinions here, but to focus on that is to miss my point. If I provoke support, opposition, change, vitriol or smiles I will have started a conversation. ●

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**DR MORDECAI OGADA** is the Executive director of Laikipia Wildlife Forum. He is a carnivore ecologist and has been involved in carnivore conservation work locally and internationally for 13 years. He is also a member of the KWS carnivore management committee and the board of Ecotourism Kenya.



Dino J. Martins (left) and Ikal Angelei (right) join primary school students in Lodwar to plant trees in honour of Wangari Maathai.

## Wangari Maathai remembered, - even in the desert

BY DINO J. MARTINS

**E**ven in arid northern Kenya, Wangari Maathai’s name and what she stood for stands out like the silhouette of a great tree on the barren desert landscape.

This is what I thought and felt as we celebrated the life of the environmental and human rights activist at a tree-planting ceremony organised by Ikal Angelei and the Friends of Lake Turkana near Lodwar ([www.friendsoflaketurkai.org](http://www.friendsoflaketurkai.org)).

We planted trees at a primary school and an internally-displaced people’s (IDP’s) camp. As we gently lowered seedlings into the sandy soil and carefully watered them, I reflected on how wonderful it was that even here in northern Kenya’s remote deserts we were celebrating the life and example of Wangari Maathai.

When the head teacher of the primary school asked the students: “Do

you know who Wangari Maathai was and what she did for us?” the answer was a unanimous and resounding “Yes!”

I asked myself, “What was it about Wangari Maathai that inspired and set an example for so many different people from so many different parts of the world?” Here were hundreds of children, citizens of the town, students from the U.S. and even refugees willing to take action to plant trees and nurture them to honour a woman and her example. Why was it that the world listened to what she had to say?

Wangari Maathai won the Nobel Peace Prize in 2004 for, according to the Nobel committee: “her contribution to sustainable development, democracy and peace,” which she primarily did through the Green Belt Movement that she founded. She was a true heroine, especially for Africans, having stood

firm against powerful and corrupt forces throughout her life.

People across East Africa and the world mourned her passing in September, 2011 when she died of cancer in a Nairobi hospital. Her departure was recognised by tributes from world leaders and her obituary appeared on the BBC, CNN, in the New York Times and the Guardian, as well as hundreds of other forms of print and digital media across the world. Messages of condolences and recognition came from world leaders including President Barack Obama and the UN Secretary General Ban Ki-Moon. She was honoured with a state funeral in Kenya.

Wangari Maathai’s example and message is one of particular importance to Africa. Long before she was recognized and celebrated on the global stage, she was standing up for

human rights and the environment in Kenya. I first heard of her as a student in rural western Kenyan town of Eldoret. Wangari Maathai was in the newspapers for standing up to the Daniel arap Moi regime and fighting, peacefully but literally, to save Karura Forest and other public green spaces from land-grabbers and illegal development.

Her example at this time, when no one dared question the authority and power of the state, was incredible. It meant that for many young Kenyans, like myself, our view of our country and how things work included a narrow ray of hope. She was one of the only truly heroic people of that time, when the regime handed out our forests as gifts to their slathering corrupt friends. Wangari Maathai showed all of us that

it was possible to stand up for what one believed in.

Thus through her brave example our forests represented not just ecological sanctuaries. They were also the sanctuaries for our souls, hopes and dreams. Wangari Maathai inspired a whole generation of Kenyans to care and to truly believe, that, as she was fond of quoting Gandhi: "We MUST be the change we want to see in the world." Wangari Maathai really lived up to this, as every moment of her life she strived to be a force for change.

How can we in East Africa best honour and continue to be inspired by her example?

The task of forest conservation and achieving a sustainable living environment remains immense, especially in Africa. Kenya currently

adds a million people a year. Every single citizen, child, farmer, worker and leader needs sufficient resources to survive and prosper. But this development cannot proceed apace without taking environmental sustainability into account

Most of Kenya's forest cover has been cleared in the last few decades. Once permanent rivers are now seasonal. Lakes are on the brink of drying out. Large-scale land development threatens vast areas. Will we wake up and heed Wangari's call?

"We owe it to the present and future generations of all species to rise up and walk!" ●

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**DINO J. MARTINS** is a Kenyan naturalist, artist and writer studying how insects influence both human life and the way the world works. He studies the intricate connections between insects and sustainable human enterprise. He asks that everyone spends a few minutes a day looking at an insect as a means of enlightenment and inspiration.

For more information on the Green Belt Movement:

[www.greenbeltmovement.org](http://www.greenbeltmovement.org)

For more information on research and conservation in the Turkana Basin:

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**Here's what Richard Vigne, CEO of OI Pejeta Conservancy, said about a two-day session organized for staff of the Northern Rangelands Trust.**

"Various OI Pejeta staff attended a two day communications workshop hosted by Andy Hill in 2010; afterwards we all agreed that it was one of the best most informative workshops any of us had ever attended. Consequently the way we now communicate our messages with stakeholders and the general public has changed enormously, and for the better. This is a "must go to" course for anyone working in an area where there exists significant interest amongst the general public and where it is imperative the messages are correctly and clearly communicated".

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BY PAULA KAHUMBU

# POISONING WILDLIFE IN KENYA

A chance to show the world how to prevent it

Poisoned Fulvous Whistling Ducks



**I**t is now becoming abundantly clear that the intentional and unintentional poisoning of wildlife by agricultural pesticides may be the greatest threat to many species of wildlife in Kenya.

Kenya's lion population is down to 1,970 from 15,000 10 years ago and declining at a rate of over 100 per year, primarily due to poisoning. Vulture populations may be down by up to 50% countrywide, and the Egyptian vulture is on the verge of extinction locally. But it is not just lions and vultures. Hyenas, jackals and thousands of birds are also affected by pesticide poisoning annually. WildlifeDirect formed a task force in 2008 to address the issue and has been working with government since then to find a solution.

It wasn't until a joint visit to the Bunyala rice irrigation scheme with the Ministry of Agriculture, Pest Control Products Board, WildlifeDirect and the Kenya Wildlife Service that the diverse implications of wildlife poisonings were really made apparent to all. Hunters use pesticides to bait wading birds in the rice paddies leading to the deaths of tens of thousands of storks, doves, and other wading birds annually. But that's not all that is affected by the pesticides – there is a huge complex web of impact.

The paddy water is also used for bathing and drinking, and the poisoned birds are eaten by humans. Fish, frogs, snails and other invertebrates in the water are killed, kingfishers and fish eagles are secondary targets of the poisoned fish and frogs. Perhaps the most worrying to government officials is the exposure of people to these pesticides, including children who drink the contaminated water, and eat the poisoned meat. That is not to mention the actual poachers who handle the pesticides directly with bare hands. Residents of the area claim that they experience bouts of dizziness, headaches, joint aches and even miscarriages and even deaths, however none could be verified conclusively to be linked to pesticides. Nevertheless, all of these are symptoms of acute or chronic exposure to pesticides.

The one-week visit, which included interviews with local authorities, poachers and pesticide outlets, revealed

**KENYA'S LION POPULATION IS DOWN TO 1,970 FROM 15,000 10 YEARS AGO AND DECLINING AT A RATE OF OVER 100 PER YEAR, PRIMARILY DUE TO POISONING. VULTURE POPULATIONS MAY BE DOWN BY UP TO 50% COUNTRYWIDE, AND THE EGYPTIAN VULTURE IS ON THE VERGE OF EXTINCTION LOCALLY.**

**TOP:** Poisoned Openbills  
**FAR RIGHT:** Intoxicated Knob-billed Duck and dead Fulvous  
**BELOW:** Poisoned Openbills being packed for sale



that the pesticide poisoning of birds was an ongoing practice, and that there were certain individuals who were specialized in this activity behind the practice. These individuals claimed that the killing of birds for food was a cultural practice, and that the use of pesticides was simply a modern and more effective means of acquiring this cheap protein. The birds were being sold to a known clientele and the authorities admitted that the poaching was virtually impossible to halt due to the combination of the difficult and vast terrain, the ease of access to pesticides, and the cultural basis for the practice.

During the visit the authorities had the foresight to meet poachers and really get to understand the basis for their actions and then advise them on the dangers to themselves and their communities through the exposure to pesticides in water, and in the consumption of birds that were poisoned by pesticides. The chemicals being used included pesticides that are not even meant to be in Kenya, including Furadan, which was withdrawn by



the manufacturers FMC after it was revealed through the popular news show in CBS 60 Minutes in America that this pesticide was the foremost killer of lions in Kenya. However, despite its removal from Kenyan shelves, it is still available in border areas as stocks were simply redistributed to Kenyan neighbours Tanzania and Uganda.

The fact-finding mission to Bunyala this year created new opportunities for the authorities to recognize the problem and address it. One of the key outcomes was acknowledgement that the problem is real. A follow up meeting concluded that education was critical to empower those in positions of influence, power and authority, as well as the users of these pesticides and the consumers of the poached meat.

The stakeholders include the Ministry of health, veterinary department, the Agriculture ministry, wildlife, water and the irrigation boards, local authorities, the police, and the ministry of internal security.

Now conservationists including WWF and WildlifeDirect are working with government officials to create a communication plan and fund-raising proposal to address the problem of wildlife poisoning across the country. Our plans include site visits to several other locations in the country where we recognize that the poisoning of wildlife is a major threat. We welcome any support towards this initiative to stop the pesticide poisoning of wildlife through donations to WildlifeDirect that will be used for further research and documentation, creation of a communication materials, and site visits for fact finding, enforcement and reporting.

It is a huge boost to Kenya that the government is looking for means of halting the pesticide poisoning here and the lessons learned may be equally if not more valuable to other

countries in Africa including Tanzania, Ethiopia, Uganda and even Rwanda. In Zimbabwe, pesticides are being used to poison large animals like elephants and rhino by poisoning waterholes, and in doing so kill everything that comes down to drink. In some lakes crocodiles are dispatched by hunters with pesticide-laden fish, and from time to time people are sickened and even killed after eating the flesh of poisoned animals. In South Africa and some west African countries, vultures are poisoned and then their heads eaten in traditional medicines.

When it comes to pesticide poisoning of wildlife, Kenya has this opportunity to lead the way in Africa to defend native and migratory species of animals and birds, as well as the people and industries who depend on them. ●

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**DR. PAULA KAHUMBU** works tirelessly to protect Kenya's wildlife and wild places. She is the Executive Director of WildlifeDirect, the online blogging platform for conservationists, and the Kenya Land Conservation Trust. She also volunteers as Chairman of the Friends of Nairobi National Park, FONNAP.

# Conservation in Tanzania

## A treasure trove needing sound management

BY THE TANZANIA NATURAL RESOURCE FORUM

IN CONSULTATION WITH EXPERTS IN THE NATURAL RESOURCE SECTOR IN TANZANIA.

**T**here's no doubt about it – Tanzania is a special country when it comes to all things natural and how it has set about conserving and managing its natural heritage. The country can boast of having two of the world's 27 biodiversity hotspots and amongst the most diverse and biggest collection of large mammals on earth.

In many regards, Tanzania can hold its head high as being a global conservation leader—more than 40% of its terrestrial surface area is ostensibly managed for conservation under a terrestrial protected area system, ranging from strict protection, to sustainable utilization in protected areas, to multiple-use community-managed areas. It also has a system of marine protected areas and beach management units (managed for and by communities), and is in the process of improving the management of its offshore fisheries. The extensive system of national parks and game reserves

forms the basis for the country's tourism sector, its number two foreign exchange earner, which, despite global financial troubles, has continued to do quite well.

However, there is sufficient empirical and circumstantial evidence to strongly suggest that Tanzania's wildlife, forests and inshore fisheries are all in decline. As one of the poorest countries in the world, with a rapidly growing population, Tanzania faces an array of challenges in trying to prevent its natural resource base from declining further and undermining the country's future development. Simply put, Tanzania's long-term global economic advantage largely depends on maintaining and innovatively re-investing in its renewable natural resources.

Although the vast majority of rural Tanzanians rely on natural resources for at least part of their livelihoods, the decline of these resources cannot alone be explained by population growth and poverty. Indeed, there is growing evidence worldwide that given the right enabling environment, poor

communities are proficient at sustainably managing their natural resources. Instead, it seems that the inexorable decline is closely linked to weak governance and the pattern of under-performance of some of its natural resource management institutions. So what is really happening, and what might the future hold?

Village land is at the heart of the country's land tenure and management system, and, with the exception of urban areas and state reserved lands, (for example, state protected areas), village land comprises the vast majority of land in the country. Among its strengths, the land framework underpins an integrated system of protected areas on state lands with community-based natural resource management on interconnecting village lands. To some, this might seem a misplaced utopian dream, but in actuality this system stands to be at the cutting edge of global conservation and business practices. With better

support, this structure could form the right environment for innovative and mutually beneficial long-term private-public business partnerships – a key ingredient for sustained success in linking conservation to rural development in Tanzania.

Unfortunately, the reality belies this vision: conflicts of interest, inefficient and ineffective bureaucracy and a lack of accountability are undermining the full development potential offered by the country's natural resources. It is little wonder that Tanzanians often rue the irony of being citizens of a resource-rich country yet stubbornly remaining some of the poorest people in the world.

## FOREST MANAGEMENT AND CONSERVATION

The forest sector in Tanzania has long been regarded as progressive and potentially effective legal frameworks in the region. A highlight of Tanzania's forest law is Participatory Forest Management (PFM), which allows communities to manage forests on village lands. Some 45% of the country's 35.3 million ha of forests and woodlands are under formal protection, representing about 527 government-managed forest reserves. Roughly 12% of the protected estate is under PFM, either as Joint Forest Management (JFM), a community-government partnership on state reserved land, or as Community-Based Forest Management (CBFM) on village lands.

Evidence suggests PFM performs as well as or better than state forest reserves in terms of the maintenance of forest condition. However, 17.3 million hectares (49%) of the country's forests exist on what is viewed by the government to be 'general lands'. Most general land is regarded by local communities as 'village land', but in practice their rights to the land and the trees thereon remain widely unsecured and at risk. This is despite a general view in government that this land should become village land through a process of local-level land-use planning and registration. The underlying ambiguity arises from the two main pieces of land legislation in Tanzania



PHOTO BY: TNRF

Looking out onto a Village Land Forest Reserve in Kilwa district, Lindi Region.

having contradictory definitions of village land.

Despite this policy and legal framework, the large area of forest still under open access means Tanzania suffers from a relatively high rate of deforestation, estimated at 1.16% per year (19th highest globally)<sup>1</sup> and about 410,000 ha lost per year (5th highest globally). Currently, a highly sophisticated countrywide forest inventory is being undertaken to better understand the status of Tanzania's forests. While most biologically important forest areas are under some form of protection (either state or community), concerns exist as to how effective the protection is. In sum, the country's forest loss is linked to the extent the forest policy and legal framework has (or hasn't) been implemented.

PFM has seen impressive achievements, yet the low local level earnings from CBFM and the continued lack of a revenue-sharing arrangement between communities and state under JFM are concerning. Communities aren't receiving the incentives and benefits that are needed. Linked to this, there are strong indications that

forest management institutions at local level (i.e. village natural resource committees) remain weak and underdeveloped, with insufficient capacity and ability to realise the full benefits of PFM. Some research suggests that most benefits go to local elites. Underlying conflicting interests between local government authorities, village governments and forest user groups compound this. The approach adopted thus far in supporting the development and evaluation of PFM needs to be reviewed. If it isn't, progress achieved in rolling out PFM will likely be lost.

State forest reserves are in a declining state. Management has been under-resourced for many years, with government staff often admitting that forest reserves are becoming reserves 'on paper' alone. However, the forthcoming launch (in mid-2012) of the Tanzania Forest Service, a fully-fledged executive agency, may help to rescue this situation. It will need to secure adequate resources and wisely invest in and manage its production and conservation forest estate.

Related to this issue, the forest sector has suffered from chronic levels of revenue under-collection (as

<sup>1</sup>FAO 2010. Global Forest Resources Assessment, FAO, Rome

much as a 95% loss) and illegality in forest resource— particularly timber and charcoal. For example, of the 29,000 bags of charcoal estimated to be entering Dar es Salaam each day, only 20% appear to be legal and taxed. Additionally, there is insufficient vision and clarity as to how more sustainable wood based fuel commodity chains (particularly charcoal) can be achieved.

Finally, Tanzania is preparing for an emerging new global mechanism for conserving forests in order to Reduce (Greenhouse Gas) Emissions from Deforestation and Forest Degradation (REDD). This mechanism would enable Tanzania to be paid for proactive and additional forest conservation. Enabling forest owners, such as communities, to be paid for conservation efforts, could

be an effective tool for conservation. But REDD is a highly complex undertaking, and its success should not be taken for granted. Immediate issues that need to be clarified for the success of REDD in Tanzania are tree and land tenure rights, as well as equitable benefit sharing mechanisms, particularly for communities.

### WILDLIFE MANAGEMENT AND CONSERVATION

The wildlife sector provides the basis for much of Tanzania's tourism industry. In 2007, the industry contributed USD 1.6 billion to the economy (11% of GDP). Of this, USD 1.1 billion was in direct foreign exchange earnings - 33 per cent of the country's exports.<sup>2</sup> Tourism typically involves visits to national

parks (photographic tourism) and game reserves (hunting tourism). National Parks depend on dispersal areas outside their boundaries to maintain ecological viability. Like Kenya, declines in wildlife habitat and conversion to other uses, such as small and large scale farming, have had significant impacts on wildlife inside national parks. In addition, there have been increasing levels of illegal wildlife off-take that have begun to have noticeable impacts on some species and populations. At present, there is a major poaching crisis for elephant tusk and rhino horn. In all of Tanzania's main wildlife areas, more species of wildlife are decreasing than increasing.

Wildlife management falls under four main jurisdictions. National parks are managed by Tanzania National



PHOTO BY: TNRF

A tree-climbing lion, Serengeti National Park

<sup>2</sup>Mitchell, J., Keane, J. 2009. *Making tourism work for the poor: Package tourism in northern Tanzania*. Report for ODI and SNV, London.



PHOTO BY: RESOURCE AFRICA UK, 2011

Wildebeest graze near a household in Terrat, Simanjirio District.

Parks (TANAPA, an independent executive agency), likewise Ngorongoro Conservation Area is managed by an independent authority (NCAA). All game reserves and other terrestrial wildlife protection areas directly fall under the Wildlife Division, and wildlife management areas on village lands are managed by ‘authorized associations,’ which are accountable to the Wildlife Division. Correspondingly, this leads to four major areas of interest in terms of the state of the wildlife sector in Tanzania and the nature of its governance (incentives, regulatory framework and support) underpinning:

1. The degree to which the country’s national parks - as the major resource for the tourism industry - are making wise investments and management decisions in their estate and in the interests of their partners (communities and the private sector);
2. The ability of NCAA to rise to the challenges of managing a multi-use conservation area, adhering to social and environmental safeguards;
3. The management of the country’s game reserves, game controlled areas and other protected areas

falling under management of the Wildlife Division: many of these areas form the basis for the country’s hunting industry.

4. The ability of community and other landholders to sustainably manage and benefit as much as possible from wildlife.

Regional experience demonstrates that unless a policy environment is created that allows wildlife to become economically competitive to other competing land uses, such as agriculture, it will die out. The long-term adverse impacts on the overall functioning and diversity of the ecosystems become worse as protected areas become increasingly wildlife-sparse ‘wildlife islands’. For example, this is already happening in the Tarangire ecosystem, a key part of Tanzania’s northern tourism circuit, which accounts for the majority of Tanzania’s tourism revenues. The ecosystem has shown major declines in migratory wildlife that depend on the increasingly fragmented dispersal areas outside the park.

Despite such challenges, TANAPA has gone through a substantial rejuvenation and expansion over the last 20 years, adding four new properties to

its portfolio of fifteen parks. This has helped to improve its representational coverage and protection of the country’s ecozones, although it remains incomplete. TANAPA’s overall success has led to the northern parks becoming very crowded, and efforts continue to be made to develop tourism in the southern parks to improve their economic viability.

Unfortunately, TANAPA has suffered from high levels of interference from the political establishment, with senior politicians over-riding officially agreed park management plans (for example, in terms of hotel concessions) and also extra-legally appropriating TANAPA’s financial resources. Additionally, TANAPA, NCAA and other similar executive agencies struggle with the levels of patronage and conflicts of interest in the high-level appointment of boards that have undermined the professional management of these organisations.

In recent years the Ngorongoro Crater, a UNESCO World Heritage Site, has become mired in controversy. There are general questions about how the area is being managed by its authority, with a wide range of shortcomings from improper siting and allocation of tourism concessions, to financial



PHOTO BY: TNMF

The world-famous Great Migration, Ndutu, Ngorongoro Conservation Area.

impropriety and mismanagement, to a failure to implement multi-use natural resource management in a sufficiently participatory and holistic manner. In theory the authority should exist to manage the crater on behalf of the local residents who claim customary rights over the area. But the reality is that residents play a very little role in the management and governance of the NCA.

Hunting stands to play an important role in Tanzania's wildlife sector, particularly in the vast stretches of woodlands where photographic tourism is marginal. Hunting takes place in hunting blocks across the country's game reserves and in game controlled areas. However, Tanzania's hunting industry has suffered from poor management and perverse incentives;

it has long been mired by allegations of corruption. In response, two separate parliamentary inquiries have been launched and several reports released about the hunting industry in the last five years. These have eventually led to reforms. A full inventory and assessment of hunting blocks was carried out in 2008/2009 leading to a new hunting management system, which will begin operation in the 2012-2013 season. Previously hunting block prices were not categorised across different areas, but this has now changed, with five categories of increasing hunting block quality, ranging from USD 5,000 to USD 60,000 per year.

The hunting industry has not been producing high enough levels of revenue, and government now expects

revenues to more than double to over USD 50 million per year. Yet it is debateable whether the reforms will lead to a more sustainable industry. The new hunting system has increased the number of blocks in the country, from 158 (in 2002 there were 131 blocks), it is understood without proportionately reducing hunting quotas. Trophy fees could be increased by as much as a factor of four. In this regard, hunting quotas are not scientifically set, and the mechanism for doing so is not transparent. While attempting to carry out overdue reforms that have been strongly advocated by a wide range of interests, the Wildlife Division still has some way to go to better manage the hunting industry. This is all the more a concern when the Wildlife Division remains unable to bring



A giraffe cooling off in Tarangire National Park.

wider illicit wildlife use and trade under control, including the poaching crisis, the ongoing bushmeat trade, and controversial 'grey' exports of live animals (including birds).

Over the last twenty years there has been a long and slow process of enabling communities to benefit from wildlife, most recently through Wildlife Management Areas (WMAs). WMAs have been widely critiqued for being bureaucratic, expensive to implement, poorly implemented and removing too much control from communities. The result has been some improvement in the level of benefits being received by communities from wildlife, but far less than expected. There also appears to be significant levels of elite capture, heightened levels of conflict between communities (as a result of poor design and inappropriate facilitation) and unknown (or poorly documented) impacts on local livelihoods (both positive and negative). Further, it is not clear whether WMAs have had a positive impact on wildlife populations and wildlife habitat.

As a result of the constraints posed by WMAs, a number of simpler informal community initiatives have been independently started. These include direct access agreements between

communities and tour operators as well as a growing number of land easements. All other factors being equal, these initiatives have resulted in significant success in terms of community buy-in, community control, community benefits and improved conservation outcomes. Perhaps a defining differentiator is that state-sponsored community wildlife initiatives tend to be driven and controlled by the state and local elites, with underlying objectives that may be at variance with local community interests. The unofficial community wildlife initiatives tend to be co-driven through collaborations between communities, civil society, the private sector, and sometimes, local government. These seek to align conservation incentives with local livelihoods, and achieve as much community control as possible. Importantly, they provide benefits up-front in a transparent, accountable and monitored manner. Unlike WMAs, these initiatives tend to start simple, adaptively evolve and develop appropriate levels of complexity over time.

Despite the challenges, WMAs remain central to the development of community-based wildlife in Tanzania as the only official mechanism. It can

only be hoped that overtime the WMA development process becomes simpler, better designed, and their management more community based and locally accountable with higher levels of performance.

### CONCLUDING THOUGHTS

Tanzania has invested heavily in conservation, and continues to do so, in terms of the land it has set aside. Yet recent and continuing developments – such as the likely soda ash factory at Lake Natron, the controversy of the Serengeti Road, Uranium Mining in the Selous Game Reserve and a planned port development in Mwambani impinging on a marine protected area – demonstrate that there will be an increasing range of interests competing with conservation for access to these resources, not to mention the significant impacts that climate change poses on natural resource management as well.

Nevertheless, it is all the more important that enterprise based on the sustainable use of forests, fisheries and wildlife – the business of conservation – become increasingly economically competitive and efficient, and aligned with the interests of local landholders. In this regard, the land and natural resource rights of communities must be safeguarded and strengthened. This means that the government allows – and supports – the rights of local communities in partnership with the private sector to develop innovative ways of creating thriving 'green' businesses, helping secure better conservation and livelihoods outcomes. The government also needs to bring political interference under control and improve its governance of the natural resources it holds in trust for Tanzania and the world, building on best practices from across the continent. ●

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**The Tanzania Natural Resource Forum (TNRF)** is a network based in Arusha that seeks to improve policy and practice on conservation through improved governance and accountability in relation to Tanzania's natural resources. It seeks to build bridges between local communities' needs and laws and policies governing use of natural resources.

[www.tnrf.org](http://www.tnrf.org)

# Zambia

## Now for something a little different

BY FELIX PATTON



Crossing the river on a Buffalo Camp walking safari in North Luangwa National Park.

For a safe, self-drive safari, Zambia has a lot to offer. If you have a spirit of adventure but do not want to take unnecessary risk, travelling around the country and between wildlife areas in the dry season is ideal. Arriving at Lusaka airport by Kenya Airways from Nairobi, a double cab Toyota Landcruiser with rooftop tent and camping equipment was ready and waiting courtesy of Limo Car Hire. The rest of the day was spent stocking up with food and drink, getting used to driving the automatic car, erecting the roof top tent and identifying what more camping equipment was needed.

There can be no safari to Zambia without a trip to the Victoria Falls or, as it is known locally the Mosi-oa-Tunya — 'The Smoke Which Thunders'. An early start to the 500 km trip from Lusaka on a good tar road took only a few hours allowing plenty of time to walk around and view the stunning spectacle of the cascading waters as the sun set. It is difficult to do justice to this "wonder of the world" in words, it has to be seen to be believed.

The long journey from Lusaka was made even more worthwhile by a visit, the following morning, to the Mosi-oa-Tunya National Park which spreads out along about 20 km of the Zambezi river bank. The Park is split into two sections by a main road. The freely accessed south area includes tall riverine forest with palm trees, miombo woodland and grassland with plenty of birds, and animals including giraffe, zebra, warthog, sable, eland, buffalo, impala and other antelope. The north area can only be accessed on an organised tour with visitors walking to view Zambia's only free living White rhinos (see pg 27).

With the unmissable Victoria Falls being in the far south of Zambia but the best game viewing probably in the easterly located South Luangwa National Park, a long 1000 km drive was inevitable with an overnight stop on the outskirts of Lusaka breaking up the journey. The standard of the tarred Great Eastern road was surprisingly excellent and, after 580 km, Mama Rula's campsite in Chipata was easily reached. The additional 130 km to the Park entrance could have been made the same day but there was no rush.

The 9,500 km<sup>2</sup> South Luangwa NP needs more than one day to investigate and the Croc Valley campsite lying along the banks of the Luangwa river and only some 3 km from Mfue Main Gate, was an ideal place to stay. Elephants and hippos were regularly seen in the river and even coming through the camp at night. The small swimming pool was a welcome relief from the heat of the day.

Apart from an amazingly placid elephant population, SLNP boasts some different looking Cooksons wildebeest (with their light coloured coats), Crawshays zebra (with their thin numerous stripes extending down to their hooves) and Thornicrofts giraffe (with their dark neck pattern). Croc Valley also offer guided game drives and are allowed to remain in the Park after dark. This really is the only chance to see leopards, albeit a slim one.

In the dry season it is possible to drive north on a good sandy road surrounded by mopane woodland alongside the eastern border of SLNP through the Lupande and Lumimba Game Management Areas. Between the two is a small area of SLNP known as the Nsefu sector and while passing through it two female lions were seen prowling through the bush. The road leads into the 245 km<sup>2</sup> Luambe National Park. This park is managed on behalf of ZAWA by Luangwa Wilderness e.V. a private charitable organisation who have built Wilderness Lodge, which also boasts a camping site overlooking the Luangwa river and with a large resident hippo pod. Although it is only 240 km between South and North Luangwa National Parks, a stop-over at the Lodge offers the self drive traveller a real feel of being in the wilderness. However, on driving round one of the game trails,



Thornicrofts giraffe in South Luangwa National Park.



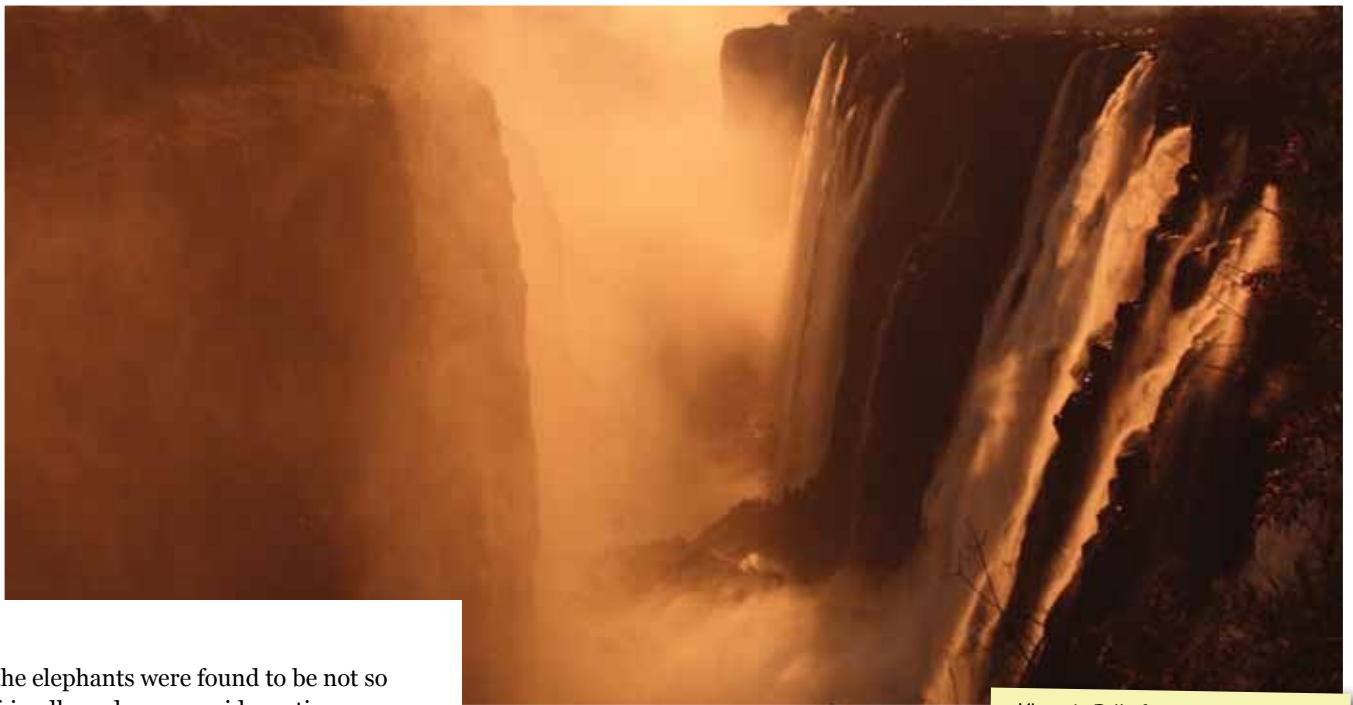
Cookson's wildebeest seen on a Buffalo Camp walking safari in the north area of Kafue National Park.



Hippo pod in the Luangwa River at Wilderness Lodge in the Luambe National Park.

PHOTO BY: FELIX PATTON

PHOTOS BY: PETRA CAMPBELL



Victoria Falls from the Zambia side.

the elephants were found to be not so friendly and some rapid reaction was necessary.

Unlike its southern counterpart, North Luangwa National Park (NLNP) is an underdeveloped wilderness which is mostly seen on walking safaris. A full range of Zambia's wildlife can be found but special are the huge herds of buffalo that attract both lions and hyenas. Most of the southern section of the Park has been set aside as wilderness and it is necessary to arrange to stay with one of the safari operators. Getting into the Park across the river on a pontoon was an experience! Buffalo Camp, run by Mark and Mel Harvey, comprises a number of elephant grass huts with en-suite shower and toilet. The huts overlook the Mwaleshi river, a small tributary of the Luangwa river which has water all year round. Visitors can do self-catering or take full board.

The day and afternoon walking safaris consist of a three to four hour wander along the banks of the river, sometimes crossing from one side to the other, where the wildlife come to drink. Buffalo camp's guide, Sunday, was a mine of information on the wildlife, birds, insects, plants and animal tracks finding the Cooksons wildebeest (with their light coloured coats) but regrettably even he was unable to find a large herd of buffalo or any lions on this occasion.

To go from Buffalo Camp to the north of the Park through to Mano Gate



Lions found in Kafue National Park.



Elephant family in Luambe National Park.

involves driving from the bottom of the valley through the North Luangwa Rhino Sanctuary up to the top of the Muchinga Escarpment. Although rarely seen, visitors may come across one of the thirty Black rhinos in the sanctuary (see pg 26). From the Gate to the town of Mpika means an undulating drive along a good dirt road across the Kalenga Mashitu Range.

Having spent seven days wildlife watching there is a need for something completely different. A short drive from Mpika up the Great North Road 92 kms and then 30m kms west, is the resort of Kapisha Hot Springs. Its worth the journey in order to lie in the naturally hot clear water and come out relaxed and totally cleansed of the dust build up of the past days. First sighting of the rare Palm Nut Vulture was a bonus.

Next day just over 200 kms back down the Great North Road to Mutinondo Wilderness, 10 kms<sup>2</sup> of granite whaleback hills with extensive hiking trails. After a strenuous three to four hour walk, a dip in the ice cold river pool soothes the aching limbs. One of the walks takes in a series of three small waterfalls along the Mutinondo river.

The chance to see the rare sitatunga in the swampland means a stopover



The pontoon vehicle crossing into North Luangwa National Park.

PHOTOS BY: PETRA CAMPBELL

at Kasanka National Park. Birdlife in abundance was promised after a 20 metre climb into the Fibwe Hide but it had been destroyed by a fire. The distant sighting of a group of sable antelopes did not make up for the disappointment.

The last leg of the safari was a long 800 km trip back to Lusaka and west to Kafue National Park and McBrides bushcamp. Chris and Charlotte McBride established the camp on wildlife trails so animals wander through the site.



One of the vast herds of buffalo in South Luangwa National Park.



The author with the transport and accommodation used for the Zambia safari.



Crawshaw's zebra in South Luangwa National Park.

Their very informal, laid back approach would not suit everyone. Lions are their passion and can often be heard at night with a chance to follow the tracks next day on foot. Poaching is a problem in the Park and three lions were found with snare wounds that needed veterinary treatment. During

a Kafue river sundowner trip, elephants were closely observed crossing, waist deep, from bank to bank. The last 24 hours in Kafue were based at the Mukambi Safari Lodge. The Lodge's evening guided game drive was a great success with the only sighting of the Lichtensteins hartebeest and a pride of lions which would not have been found by the inexperienced.

Three weeks self drive exploring Zambia was well worth the effort. The revelation was the good road conditions even on the less well travelled dirt roads. The essential was the need for good tsetse fly and mosquito repellent and appropriate

clothing. Good planning and a GPS are a prerequisite. Barely adequate camping equipment and the need to climb on the car to handle the roof top tent would put off many less flexible hirers but the vehicle was technically excellent albeit with a handbook only in Japanese! What Zambia may still lack in quantity of wildlife, it makes up in quality with different sub-species of wildebeest, hartebeest, zebra and giraffe and a do-it-yourself safari is highly recommended. ●

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



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PHOTO BY: ED SAYER

Black rhino Twashuka in North Luangwa National Park, Zambia.

# The History of Rhinos in Zambia

BY FELIX PATTON

Pitman 1934 reported that no evidence of White rhinos north of the Zambezi in historical times. Black rhinos were in urgent need of protection being killed for meat and the value of their horns with security hard in some habitats. There was a plentiful population in the Luangwa Valley, a wildlife area of some 63,000 sq km containing four national parks (NPs) and seven game management areas (GMAs), to the east of the river while the population was sparing to the west.

Rhinos became protected in 1946 and by 1952 the decline in the population was thought to be halted with some 350 individuals in the Luangwa Valley Game Reserve and Munyamadzi Controlled Area. Elsewhere there were only remnant populations of between six and 10.

Some areas were completely protected while in others a special licence was required for hunting, but by 1957 even this had been withdrawn. Key rhino areas were Kafue National Park, Mweru Marsh Game Reserve and the Luangwa Valley Game Reserves.

Exact rhino population data was not available but was thought to be at least 400-500 in Luangwa Valley and 130 in Kafue National Park in the late 1960s with some 20 rhinos in Mweru Marsh Game Reserve. Populations and their locations were distorted by tsetse control activities including the erection of fences, fly-around controls and some rhinos needing to be shot. As many as

50 rhinos a year were thought to be poached.

Permits to capture two alive for zoological gardens were issued in 1968. The high cost of a rhinoceros permit (K 400.00, = £200) brought a realisation of their value, resulting in heavier sentences for poaching—up to two years' imprisonment compared with the previous inadequate fines.

At the beginning of the 1970s, an estimated 4,000 to 12,000 rhinos still lived in Zambia. The country was, in 1980, home to the third largest population of Black rhino on the continent. In Zambia's main wildlife areas, such as the Luangwa Valley and the Kafue National Park, the Black rhinoceros populations were stable and in some places even increasing. A breeding population of around 20 individuals survived in the Mweru Marsh Game Reserve area.

It became clear in 1979 that commercial poaching was drastically reducing the numbers of rhino in Luangwa Valley and the Zambian Government, through its National Parks and Wildlife Service (NPWS) and the World Wildlife Fund, responded by setting up Save the Rhino Trust (SRT). Following a low intensity multi-species aerial survey covering North and South Luangwa NP and Luambe NP plus some adjacent GMA on a 2000-km flight path, intended primarily to count elephants, an estimate of 867 ± 250 rhinos was recorded. A high intensity

survey in just the 212 km<sup>2</sup> Nsefu sector of South Luangwa National Park yielded an estimate of 66 ± 29 rhinos.

By the mid-1980s, some 100,000 elephants and all rhinos had been killed by poachers. Civil and liberation wars were factors in the decimation of rhino population in Africa. The wars led to influx of refugees from many neighbouring countries. The refugees came with illegal firearms, which were used in killing wildlife. Efforts to save this charismatic and highly endangered animal through the late 1970s and early 1980s failed to stem the demand for its horn and the species was declared nationally extinct in 1998. Also since the 1970s, Zambia has had inadequate trained manpower and rhino management plans to guide the design and implementation of conservation strategies.

In 2003, Zambia formulated a national policy on rhinoceros management and rehabilitation. The policy provided guidelines and strength to the rhino conservation fraternity and a framework to guide the reintroduction of rhinos in Zambia's established private and state owned wildlife sanctuaries. The working paper indicated that political will had been lacking in rhino management, citing political patronage of those involved in the rhino horn trade and corruption within the law enforcement agencies.



Twatemwa and Twatasha, Black rhino mother and calf in North Luangwa National Park.

PHOTO BY: ED SAYER

## The re-introduction of Black rhino to Zambia

The North Luangwa Conservation Program (NLCP) was started during 1986 by the Frankfurt Zoological Society (FZS) to support and strengthen the Zambia Wildlife Authority (ZAWA), enabling effective management of the park and surrounding Game Management Areas. FZS and ZAWA signed long-term management agreements and, after 17 years of support, wildlife numbers had increased and poaching was under control. Re-introduction of the Black rhinoceros was an obvious next step in the conservation of the park.

ZAWA, FZS and South Africa's SANParks joined forces to organise a rhino exchange programme. The objective was to re-establish a viable, breeding, free-ranging population of Black rhino (*Diceros bicornis minor*) in North Luangwa National Park in north-eastern Zambia. The effective project management area is almost 17,000 sq km including the Park and surrounding Game Management Areas. Important was security against poaching and proper park management in North Luangwa; a costly affair. Preparations included identifying a sanctuary, recruiting security personnel, training a rhino security team, and building staff houses, holding pens and the sanctuary fence.

Twenty rhinos were obtained from reserves in South Africa: Kruger National Park, Marakele National Park, Pilanesberg National Park and Great Fish River Reserve in the Eastern Cape. They were

flown in individual crates, in batches of five, to an airstrip in North Luangwa - 2 males:3 females in May 2003, 3 males:7 females in June 2006 and 2 males:3 females in May 2008.

The first five were released into a 55sq km fenced area with the next 10 into a 150 sq km sanctuary adjacent to the first. During March 2009, the fence separating rhinos released during 2003 and 2006 was removed. Survival of the rhinos was relatively high and no rhinos were poached. By January 2010 numbers increased with five births exceeding the three deaths. However, the release phase of the project was incomplete, because the number of surviving founders was less than the 20 required and most of the rhinos were confined to the fenced sanctuaries and not free-ranging.

The final five individuals needed to complete the founder population were introduced in May 2010 with four females and one male translocated from the Hluhluwe-iMfolozi Park and Ithala Game Reserve in South Africa.

Today, the population stands at over 30, following nine births, in a 3000 sq km sanctuary split into 4 areas with an overall carrying capacity estimated at 40 to 45 rhinos. However the Project will only be deemed a success when the fences are removed and the rhino once more roams free in the Luangwa Valley, on Zambian soil. ●



White rhino mother and calf in Mosi-oa-Tunya National Park.

PHOTO BY: PETRA CAMPBELL

## The introduction of White rhinos to Zambia

In 1934 Captain Pitman reported that there was no evidence that White rhinos had inhabited Northern Rhodesia, (the pre-independence name for Zambia), north of the Zambezi river in historical times. In fact there was scant evidence to even suggest they had been in the area south of the Zambezi.

However in 1964, as part of a destocking project in Umfolozi Game Reserve, Zululand, South Africa, two male and two pregnant female White rhinos were delivered to Livingstone Game Park. Some records suggest that one pair went on to Kafue National Park but when the male died the female was moved back to Livingstone. In 1973, a pair from the Park was relocated to the Presidential Palace. Nonetheless by 1981 the population had risen to 13 but poaching saw their decline to six in 1985. The last one was killed in 1989.

In 1993, the Zambian government acquired six White rhinos from Sable Ranch in South Africa. One died and there were no conceptions leaving just 5 in 2001 all in Mosi-oa-Tunya National Park, Livingstone. This was reduced to two by 2005.

In January 2010, poachers shot these last two White rhinos, killing one and wounding the other,

the male Lewis. Later that year, in a deal brokered by Government through the Ministry of Tourism, Environment and Natural Resources, four White rhinos and 10 Black rhinos were obtained from South Africa in exchange for wetland species of antelopes destined for the Namibian government. A calf was born in August 2010 but it died but this was quickly followed by the birth of two female calves, one in December 2010 and the other in January 2011.

The rhinos are kept in the north of the 66 sq km Park under 24 hour a day monitoring utilising a rhino ranger force numbering 20. During daylight hours, the rhinos are physically observed while at night their GPS location is transmitted. The grass in the area is supplemented in times of shortage with hay and lucerne.

The new and soon to be opened Lusaka National Park received two White rhinos donated by the South African government as part of its ongoing re-stocking exercise. The fully fenced 46 sq km park is located south of Lusaka and is seen as central to tourism development. It is to be stocked with a minimum of 500 animals of different species, particularly antelopes, before its official opening. ●

# COMMUNITY WILDLIFE MANAGEMENT

## WHAT IS BENEFIT SHARING?

BY NIGEL HUNTER

Turning participatory management of wildlife resources from theory into practice is a formidable task. It requires the following:

- Policy and implementation to be linked through a feedback process;
- Government institutions and rural communities to negotiate as partners; and
- A complex set of interest groups to collaborate and participate honestly in the process.

The purpose of this article is to facilitate that requirement by appraising the current understanding of what Community Wildlife Management

(CWM) represents with particular regard to the differences that exist between the community-based and benefit sharing approaches to CWM. A lack of understanding of these differences is the cause of many of the misunderstandings about CWM.

Therefore understanding the different philosophies underlying the community-based and benefit sharing approaches is critical for field implementation

### THE COMMUNITY -BASED APPROACH

Community-based conservation means rural people making decisions about the sustainable management of areas which they share with wildlife. In assuming this management responsibility, they derive benefits from wildlife. The aim is to promote the development of rural communities.

In order to achieve this aim, community-based conservation is based on a set of principles outlined by Murphree (1993) and called the "OPTIMUM CONDITIONS FOR RESOURCE MANAGEMENT UNDER A COMMUNAL PROPERTY REGIME". This highlights that community-based conservation is about communal property resource rights.

The five principles of the community-based approach are as follows:

1. Effective management is best achieved by giving wildlife a focused value for those who live with it.

People will seek to manage the environment when the benefits of management are perceived to exceed its actual or perceived costs.

2. Differential inputs must result in differential outputs. Benefits should be directly related to the level of investment input. The best measures to use are labour, land or costs because the wildlife itself is unevenly distributed and a mobile resource. Emphasis needs to be placed on the costs of maintaining the wildlife which can be measured as crop and livestock damage or the opportunity costs of other land uses noting that these costs are not evenly shared among the population.
3. There must be a positive correlation between management and benefit. Improved conservation, management and marketing should return greater benefits.
4. The unit of proprietorship, management and benefit should be the unit of production. The people who live on the land should manage it and also be the major beneficiaries. Proprietorship concerns who participates and make the decisions.
5. The unit of proprietorship should be as small as practicable within ecological and socio-political



constraints. A communal property management regime is enhanced if it is small enough for all members to meet face to face, to enforce conformity with rules through peer pressure, and to create a long standing identity.

## THE BENEFIT SHARING APPROACH

Benefit sharing is aimed at improving the relationship between a Protected Area (PA) and the people living around its borders, or in some instances within a PA. Benefit sharing approaches focus on extension work and awareness raising in association with the sharing of benefits, which may include “revenue sharing”, in recognition of the difficulties communities experience from living next to the PA and its wildlife, or in acknowledgement of past cultural ties to the area. However, the level of participation tends to be passive or consultative, the type of benefits (e.g. revenue versus resources) and form they are shared in (e.g. cash versus social services) are rarely determined by the communities and the approach is synonymous with the wildlife agency retaining control over the land and the resources within the PA.

The benefit sharing approach has not been examined or debated to the same degree as the community-based approach. However, it is possible to distinguish three principal types of model, while recognizing that each tends to contain elements of the other two:

### 1. The Good Neighbor Model

In an effort to improve neighborly relationships and create tolerance of the PA, the management authority assigns a percentage of revenues for distribution, usually in the form of social services which are perceived to be good for the community. A variant of this model involves private operators working in the tourism sector in or around the PA aiming to improve their relationship with local communities in similar fashion. Experience suggests that the linkage between the “benefit” and conservation objectives remain weak, and that the communities do not always perceive the benefits

## BENEFIT SHARING IS AIMED AT IMPROVING THE RELATIONSHIP BETWEEN A PROTECTED AREA (PA) AND THE PEOPLE LIVING AROUND ITS BORDERS, OR IN SOME INSTANCES WITHIN A PA.

as addressing their real needs in terms of rural development. This is potentially the most passive form of benefit sharing model.

### 2. Problem Solving Model

This model aims at building trust and tolerance, even appreciation, by having the local communities represented on advisory committees where they are recognized as stakeholders in the management of the PA. The management responsibility, however, remains with the relevant agency. The rationale underpinning community involvement is that management issues are not normally confined to the PA and, therefore, by creating a forum for dialogue, potential conflicts can be identified and mutually beneficial solutions found. The process has a strong educational intention and communities and agencies encourage one another to understand and reconcile national and local objectives. A clear example of a management issue pertinent to this approach is that of problem animal control on PA boundaries. In this case the benefits derived would relate to reducing hostile attitudes towards the PA and wildlife at the same time as reducing the costs incurred by local communities in the form of crop and livestock damage.

### 3. Business Development Model

This version is the most active one, since it seeks to establish the PA as an opportunity for income generation by the rural communities. Essentially the PA remains under agency management, but the development of tourist infrastructure and business opportunities, for example, are provided to neighbouring communities through the ability to

lease sites, enter into contracts with entrepreneurs and realize income. Policies and legislation together with PA management plans set out conditions and provide guidance on the limits of environmental parameters such as carrying capacities, sustainable off-takes and level of tourist use. Experience is still fairly limited in this version.

Conceptualising these models as discrete and separated is useful for clarifying the issues, but it is important to keep in mind that actual schemes are developed in response to a variety of constraints which tends to produce amalgams. The land, policy and legislative factors are notable examples of such constraints for they are country specific and generally result in schemes which aspire to being community-based rather than actually achieving community based conservation. Administrative Management Design (ADMAD), in Zambia, is an example of a programme which aims to be community-based but which contains very clear elements of benefit sharing.

It is better, therefore, to envisage projects as lying along a continuum with the community-based and benefit sharing models lying towards the extremes of the spectrum. At the community-based end, the initiatives should be viewed as aiming for wildlife management which is an alternative land use option because its origins lie in common property resource management. In contrast, the benefit sharing models are essentially strategies to improve conservation goals and, although conflict mitigation is encouraged, management is not devolved, nor is there any intention to devolve it.

In practice, benefit sharing projects have proved to be less controversial and more politically safe for government



PHOTO BY: PAOLO TORCHIO

**THE COMMUNITY-BASED APPROACH, HOWEVER, IS PROVING MORE CONTROVERSIAL TO IMPLEMENT. COMMUNITY-BASED CONSERVATION DEPENDS UPON EMPOWERING PEOPLE AND SPECIFICALLY IT HINGES ON GIVING PEOPLE AUTHORITY AND MANAGEMENT CONTROL OVER THE WILDLIFE RESOURCES ON THEIR LAND (OR LAND WHICH THEY MAY HAVE USUFRUCT RIGHTS OVER) AND CREATING THE FISCAL POLICY WHICH ENABLES THEM TO REALIZE TANGIBLE BENEFITS.**

agencies. Variations on this theme are also proving increasingly attractive to private companies. They do not necessitate any shifts in power or authority over the resource and neither do they aspire to them. Instead the

relationship is characteristic of that of the sponsor and recipient where the sponsor determines the terms of the relationship, although they are described in terms of partnership. They marry easily with the notion of PA

networks and they are closely associated with them because they do not involve changes in authority or responsibility with regard to the resources.

However, benefit sharing approaches are subject to problems due to lack of community participation, failure to realize community expectations and an inability to bridge the conceptual gap between benefits realized and the management of the resources. Benefit sharing projects are often promoted, facilitated and managed by NGO's keen to enter the CWM area yet assume quasi government responsibilities. Under these circumstances, there is minimal change in government policies and legislation affecting wildlife management and there is no necessity to adapt the function of government structures. As a consequence, when this type of project cycles ends, this

approach leaves little CWM trace.

This critique is not intended to imply that the benefit sharing approach is redundant and has no role to play. On the contrary it may prove to be the only viable option in some circumstances, but it does highlight that its limits need to be recognized. The potential strengths of the benefit sharing schemes lie in attention to extension work, a focus on the level of participation realized, the type of benefits realized and the degree to which problems are actually solved. These points should clarify why it should not be confused with the community-based approach.

The community-based approach, however, is proving more controversial to implement. Community-based conservation depends upon empowering people and specifically it hinges on giving people authority and management control over the wildlife resources on their land (or land which they may have usufruct rights over) and

creating the fiscal policy which enables them to realize tangible benefits. The promotion of the development goals of community-based conservation is a sensitive issue and it is especially sensitive when the PAs are also involved. Paradoxically, PAs are usually part of the rationale for beginning CWM projects. Combining PAs and the community-based approach adds confusion if it originates from the erroneous notion that community-based conservation can be used as a conservation strategy.

Community-based conservation can only rightly apply to the land areas under the control of the communities. While the location of community wildlife areas next to or within a PA tends to be an advantage because it helps maintain the sustainability of the resources, it can also mean that the communities' authority over their land may be limited by estate control over the PA and this will undermine

the initiative. Therefore, the linkages between land tenure and wildlife management, community and agency authority and areas of responsibility must be clear to both parties from the beginning. These linkages, authorities and responsibilities can only be worked out by extensive dialogue between the two parties. ●

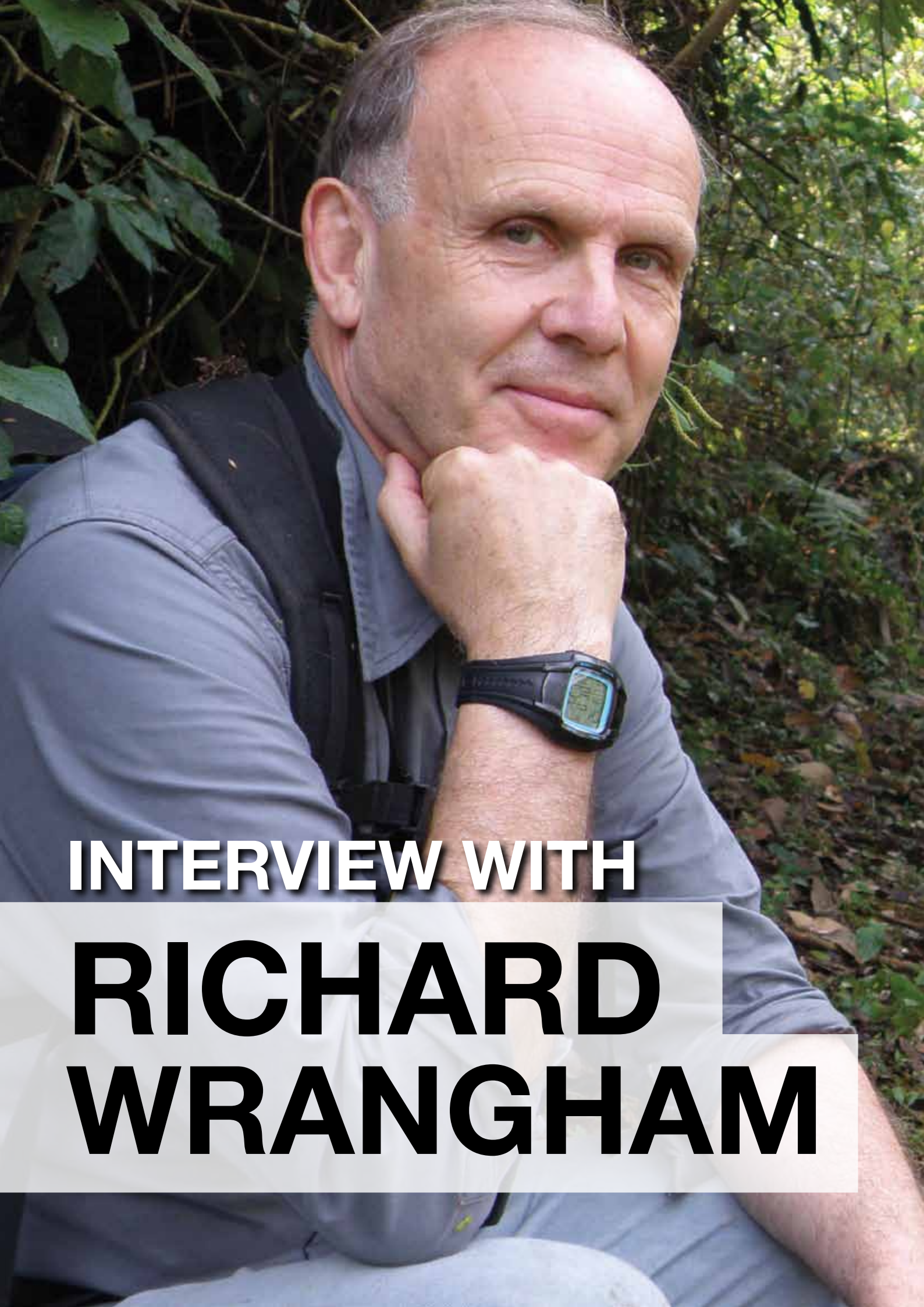
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**NIGEL HUNTER** is the Executive Director of East African Wild Life Society.





**INTERVIEW WITH**

**RICHARD  
WRANGHAM**

BY CAROL MBABAZI

### **How did you become interested in science and nature?**

I was a naturalist as a kid, following my parents' interests. Bird-watching and adventure took me to the wild, but it was when I encountered essays on evolutionary theory in SA Barnett's 'A century of Darwin', in my early teens, that the wild became truly intriguing. I found a way to Zambia and spent 9 months in a savanna park before going to university. That was 1967, and I've done fieldwork in Africa every year since then (except one - the year my eldest son was born).

### **How did the study of chimps and human evolution come about?**

I was always interested in human behavioral evolution but it was chance that got me studying chimpanzees - a recommendation from my tutor Harold Pusey at Oxford, based on his daughter Anne's experience. I expected to study them for a short time, and then move on to other animals. And I did - after a PhD based on work at Jane Goodall's site, I studied vervet monkeys, then people in the Congo. But once you're confronted with chimpanzees, it's hard to ignore the questions that they force on us about our place in nature. These seemed much more than causal intellectual interest, though amazingly that's often how they're treated. They make us think in a realistic way about what it means to be a species that's evolved, and what it means to be an individual made of the same essential matter as another great ape.

### **What particular aspect of chimp behavior fascinated you the most?**

A big question was about the role of violence. There was unambiguous evidence from Gombe that chimps sometimes kill each other, but many people didn't take it

seriously, blinded by hope (as I interpret their reaction) that natural selection couldn't have favored intense aggression in one of our closest relatives. It was obvious to me that the nay-sayers were wrong, because the patterns of chimpanzee violence fit so clearly into their ordinary lives. The way to test that idea was to see how often violence would turn up in other populations. So I looked for somewhere where I could study chimpanzees (and take my family while doing so), and began in Kibale in western Uganda in 1987.

Since then, we've had chimpanzees killing other adults in two separate areas in Kibale, as well as in Budongo, another Uganda site. So as time goes on the role of killing among chimpanzees is becoming clearer. Of course that doesn't mean that natural selection has necessarily been relevant to the evolution of human aggression, but it does give us the opportunity to understand how it works in another species, and in practice, the evidence for parallel patterns of aggressive evolution in chimpanzees and humans looks stronger all the time. There's still this old social-science view around that says our own dear blank-slate species couldn't possibly have a history of natural selection for anything as nasty as aggression. It seems to me a dangerous idea because it leads people to be naive about the real-life dangers - for instance, the way that under the "right" circumstances, men are so prone to the excitement of opportunities to use violence for personal satisfaction.

We're still at a very early stage of understanding the human genetic and endocrinological predisposition to violence. The apes offer richer hypotheses than most other species, because we have so much in common with them. Simply to declare, as the late great Stephen Jay Gould did for example, that the similarities between chimpanzee violence and human violence are too superficial to be in the

least informative, is a travesty. We have to be careful to use animal behavior well, but we ignore it at our peril. The good thing, I believe, is that much of the problem stems from mistrust about the information, so ultimately, the best thing we can do is simply show the facts. As the data from the wild build up, I'm convinced the academy will become more realistic. The big question is whether the interest in great apes will swell to the point where the world can commit to protecting them in the wild in time to do so.

### **How important was Jane Goodall and the work you did at Gombe in your career as a primatologist?**

Jane Goodall gave me the opportunity to study primates in the first place. Even though she was working mostly in Serengeti more than in Gombe during my three years there, she was a huge influence. She taught me the critical importance of thinking all the time one is observing: why did the individual do that?

### **What other chimp behavioral traits have you documented since you and colleagues observed Imoso, a male chimp at Kibale, using a tool as a weapon by beating up Outamba, a female chimp, a trait previously thought to be exclusively human?**

In December 2010 Sonya Kahlenberg and I published data showing that juvenile females and males tend to use sticks in different ways. If someone is carrying a stick to no apparent purpose, they are more like to be a female. Because they occasionally treat sticks as if they are caring for them, such as patting them or making a nest for them, this behavior looks like a form of doll-play. On the other



hand males are more likely to use sticks as weapons when they are older, and the few observations that we have of juveniles using sticks as weapons by throwing them or hitting with them suggest that male juveniles do it more often than females.

**Are we able to distinguish between chimp behavior learned from humans and chimp behavior independently developed?**

I am not aware of any convincing examples of wild chimpanzee behavior that have been learned from humans, but there are some suggestions. Most or all chimpanzee populations west of the Ivory Coast sometimes smash nuts with natural hammers of wood or stone. Conceivably a group of chimpanzees learned to do this after seeing humans doing something similar, or more likely after finding a place where humans had left hammers and some broken nuts with edible bits easily noticeable. But a hammering action is common among chimpanzees, such as when they hold a hard-shelled fruit and hit it against an anvil to open it. It seems much more likely that chimpanzees have invented their various tool-using techniques independently of humans, partly because it is hard to imagine them watching humans (rather than running away) and partly because most tool-using is very different from anything that humans can be seen doing. In Kibale, for example, the commonest form of tool-use is wiping the penis with leaves after copulation!

**Have researchers reached a point where it's possible to speak of chimp cultures in the same way we talk about human cultures?**

We can certainly talk confidently about chimpanzees showing social learning, and about learned traditions in the wild that vary among populations. So 'chimpanzee culture' is a common-place concept nowadays. However chimpanzee cultures are very different from human cultures because chimpanzees have no social norms that we know of.

**Are you still involved with the Great Ape World Heritage species project and if so what progress have been made over the past couple years in making the great apes the world's first World Heritage species?**

The Great Ape World Heritage Species Project ran for several years with the aim of bring the plight of the great apes to the world's attention, and in the hope of making them into a new category of protected species, 'World Heritage Species'. Eventually we were persuaded that the political challenges of creating that new category may be overwhelming. GAWHSP works closely with UNEP's Great Ape Survival Project (GRASP), and helped set up GRASP's Scientific Commission which now monitors the status of great apes worldwide. GAWHSP's role has shifted mostly into practical aims of helping to increase the conservation status of specific populations.

**How did the chimp research in Kibale figure into your theory that cooking kickstarted the evolution of modern humans?**

I have always been interested in the food choices and feeding behavior of chimpanzees, and try to sample all their foods for myself. Many of their foods are sufficiently palatable to be edible, but there are very few one can fill one's stomach with. And even if you can, you will be hungry very soon. Eventually I realized that the gap between what they eat and what we eat actually means something.

**What are some of these conservation challenges facing chimpanzee populations at Kibale, Bugondo forest and other chimp areas in other parts of africa?**

In Uganda there is little hunting of chimpanzees except for their being caught incidentally in snares set for game animals. So the big threat is loss of forest to the growing human population. Uganda has one of the world's fastest population growth rates, so it is easy to imagine the future possibility of political pressures to degazette protected land.

**And how are those challenges being met by yourself and other primatologists?**

In Kibale, as in Budongo, Kalinzu and several other forests, there are eco-tourism facilities that benefit the central government as well as local people. When President Yoweri Museveni opened the International Primatological Congress in Entebbe in 2006, he praised the contribution that primate ecotourism is making to national development. Like other primatologists, I have been involved in initiating and supporting these projects. But they are worth little without conservation education. I work with Elizabeth Ross on the Kasiisi Schools Project that has invested in raising the quality of education in general for schools around Kibale, including a focus on conservation education. A recent study found that around Kibale, most households felt that they benefit from the Park, and although environmental services were appreciated in general, the single benefit most cited by local committee chairmen was the improvement in school classrooms and staff houses. Continuing investment in education by researchers working in the forest seems a promising way to help people realize the benefits of maintaining forests for future generations. ●

**CAROL MBABAZI** studied environmental science in Masindi, Uganda and is a member of Nature Uganda where she has been active in highlighting the conservation of Uganda's wetlands as important birding areas.



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SPOTLIGHT

# Newly-found wetland in trouble from young hunters

Coordinates: S 00°01.082 ; E 035°56.757 Elevation: 5259 ft



ALL PHOTOS BY: MARTHA N. MUTISO

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**BY MARTHA N. MUTISO**

**S**awaitii swamp is an unexplored small wetland in the Northern Rift. The recently discovered swamp is just one of many unexplored swamps in the area. Like many of East Africa's wetlands, it is hidden, unpolluted and until recently, unthreatened. The Chief Warden of Lake Bogoria National Reserve, William Kimosop, discovered the swamp and has since been marketing it as a conservation area.

A recent trip to the swamp was a real eye-opener. In May, the swamp, with the waters low due to the dry weather, was full of waterfowl and livestock also grazed by the shores of the swamp. The swamp was teeming with ducks, geese, egrets, herons, cranes and other waders. The main commercial activity around the area is large-scale sisal farming and livestock keeping.

Sadly, illegal waterfowl hunting currently threatens the swamp and its biodiversity. As we were birdwatching we spotted people inside the swamp. At first we thought they were fishing or swimming. As we walked along the swamp, a closer look revealed them to be boys between 10-14 years old.

They emerged from the water and one thing was clear: they were not swimming nor were they fishing; they were hunting! They were carrying birds. The first and older of the boys came out of the swamp, briefly stopping in a nearby pool to take a final rinse in the water. The boy, who also seemed like the leader of the group, had only his hunting stick. The second boy followed, in his hands a hunting club, a Knob-billed Duck and a Red knobbed Coot, his dog closely following him behind. Three more boys followed closely behind, one carrying two Red-knobbed Coots and a Common Moorhen and the other carrying a Knob-billed Duck,

## SPOTLIGHT

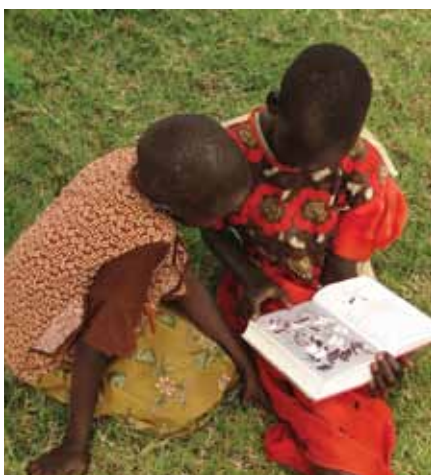


1. African Spoonbill-*Platalea alba*, whose population is seriously threatened by destruction of breeding grounds.
2. Saddle billed Stork-*Ephippiorhynchus senegalensis*.
3. Madagascar pond Heron-*Ardeola idea*, an intra-African migrant, is listed as Endangered
4. A pair of Dancing Jewels-*Platycypha caligata*.
5. African Common White Butterflies -*Belenois creona*.
6. Lesser Moorhen and Red-knobbed Coots-hunted and killed.



TOP & BELOW: The boys and girls, after an informal awareness creation.

**THERE IS A GLIMMER OF HOPE FOR THIS SWAMP AND ITS AMAZING BIRDS. COMMUNITY MEMBERS HAVE COME TOGETHER AND ESTABLISHED A GROUP THAT WILL WORK TOWARDS PROTECTION OF THE SWAMP. THEY ARE WORKING WITH THE WILDLIFE CLUBS OF KENYA TO CREATE AWARENESS ABOUT WILDLIFE, PARTICULARLY BIRDS.**



which was still alive, though its wing feathers had been plucked. Two more dogs followed closely behind. As we talked to the boys, two more emerged from a different section of the swamp, one carrying a Red knobbed Coot, hunting stick and his shoes; while the youngest of the group followed closely behind accompanied by another dog.

The boys use brutal means to hunt the birds. Armed with sticks and clubs and accompanied by dogs, they walk into the marshes, undeterred by the leeches in the swamp. They use hand made clubs and sticks and sneak up to

the birds and hit them on the heads, or pierce them with the sticks. Many birds are surprised and taken at their nests. The dogs run after the birds that escape injured. They hunt moorhens, coots, Knob-billed ducks, jacanas, ibises, storks and egrets. Eggs from nesting birds are not spared.

Jackson Komen, the Conservation and Education Officer in Lake Bogoria, spoke to the boys, and we realized that they were not aware that hunting was actually wrong. Asking them why they were hunting, they said that they were hunting for food, even though this is not an area with food shortages. We gave the boys an hour's informal education about the importance of the swamp and its biodiversity. We further explained the dangers of hunting waterfowl, telling them that they could contract sicknesses from handling the birds (avian flu) or water related illnesses. This, we hoped, helped them recognize that wildlife, including birds is a national heritage and a fundamental component of Kenya's biodiversity and



The Kenya Wildlife Service from Kabarnet and the local authorities agreed to work together to protect the wetland and the biodiversity.  
**BELOW:** Boy, with clubs, Red Knobbed Coot and Knob billed Duck and his dog.



that it is the cornerstone of Kenya's tourism sector and an essential source of foreign exchange.

Birds, especially waterfowl, are valuable economically and recreationally and have been widely recognized since the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), (<http://www.unep-aewa.org>) an international agreement aimed at the conservation of migratory waterbirds. The AEWA covers 255 species of birds ecologically dependent on wetlands for at least part of their annual cycle, including but not limited to many species of grebes, pelicans, cormorants, herons, storks, ibises, spoonbills, flamingos, ducks, geese and cranes. The agreement was concluded on 16 June 1995 in the Hague, the Netherlands and entered into force on 1 November 1999 after the required number of at least fourteen Range States, comprising

seven from Africa and seven from Eurasia had ratified and since then, the Agreement is an independent international treaty. To prevent this from happening, we informed William Kimosop, who later informed the area councilor, Mr. Kilinga. It was agreed that the area councilor was going to talk to the schools near the swamp.

However, a second visit to the swamp in July bore disappointing results. We found out that the number of the boys hunting had increased, as students were now on school holidays. We then informed the Kenya Wildlife Service officials in the area. We made another quick visit the following day, accompanied by KWS and again found the boys hunting. The boys hid in the marshes, but we talked to the area Chief and some administration policemen, who admitted that it was not the first time the boys were hunting and that the hunting had been going on for a long

**THE AREA IS A POTENTIAL ECOTOURISM AREA, RICH IN CULTURE AND DIVERSITY INCLUDING BIRDS, MAMMALS, INVERTEBRATES, REPTILES AND PLANTS. A LARGE PYTHON ALSO COMES TO DRINK OF THE SWAMP'S WATERS IN THE EVENING.**

time. This is a sad truth of many parts of Kenya: birds are increasingly being hunted where there is no policing and many communities only view wildlife as a source of food.

The area is a potential ecotourism area, rich in culture and diversity including birds, mammals, invertebrates, reptiles and plants. A large python also comes to drink of the swamp's waters in the evening. There is a proposal to construct a boardwalk across the swamp, as a tourist attraction and to make birding

easier. Other rare bird species that are found at the wetland include the Lesser Jacana-*Microparra capensis*, Lesser Moorhen-*Gallinula angulata*, Meyer's Parrots-*Poicephalus meyeri*, Eurasian Marsh Harrier-*Circus aeruginosus*, Pallid Harriers-*Circus macrourus*, African Fish-eagle-*Haliaeetus vocifer*, Martial Eagle *Polemaetus bellicosus* and Eastern Imperial Eagle *Aquila heliaca*. It will also act as a community project, which will create jobs for the local people and act as a source of income for the community.

There is also urgent need to get the swamp and its wildlife protected. This small wetland is a glimpse of what is happening to innumerable wetlands across East Africa. Wetlands are often 'invisible' and being swampy and inaccessible easily overlooked by conservation efforts. Wetlands are among the most diverse and important habitats in the region as they hold not just biodiversity, but also serve as vital giant 'sponges' holding precious rainwater for many months thereby keeping humans, livestock and wildlife alive. ●

**MARTHA N. MUTISO** works for the Insect Committee of Nature Kenya and her work entails both administration and fieldwork duties. She is also a part time third year student at Moi University, undertaking a first degree in Tourism Management. Photography and traveling are her passion.

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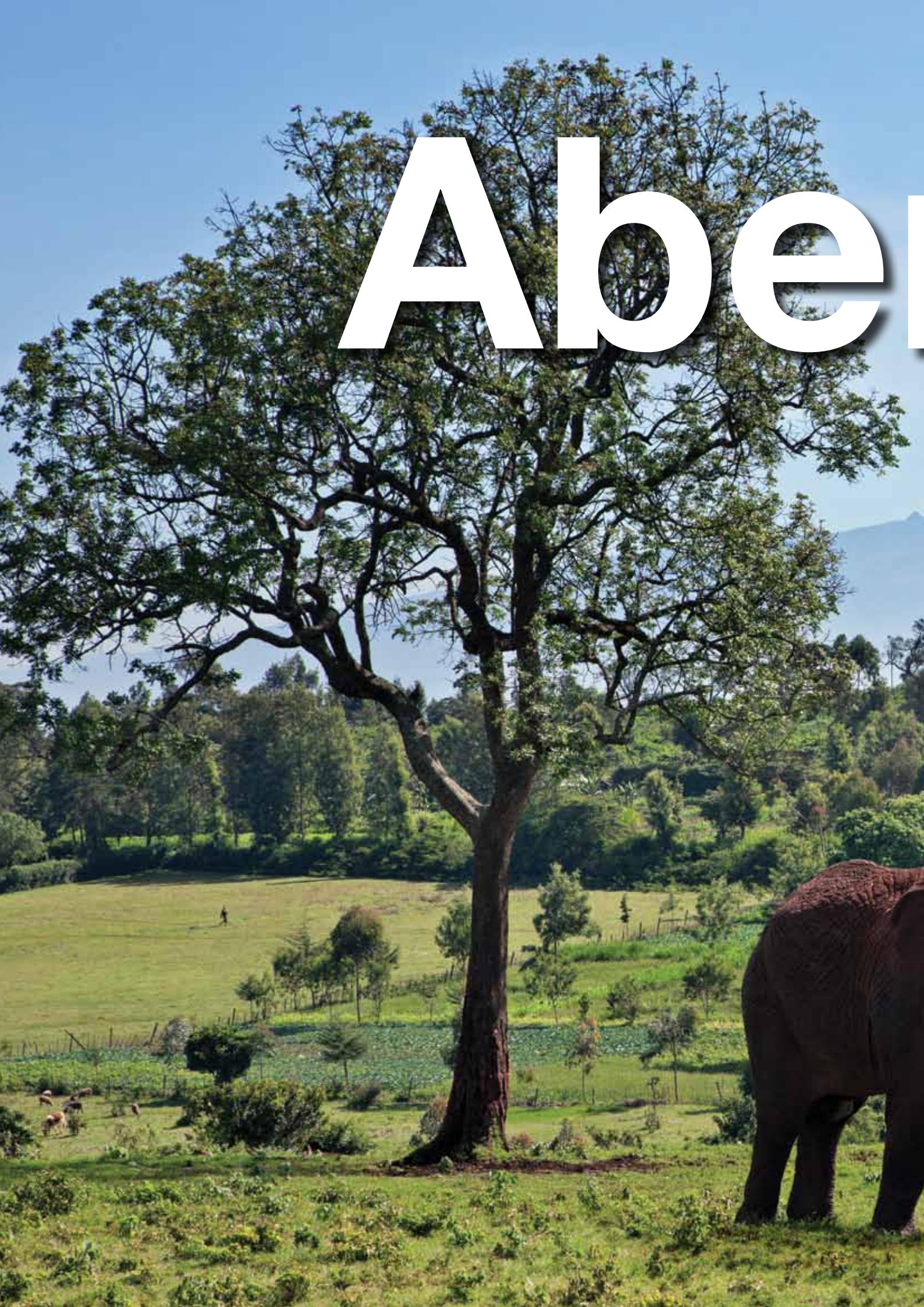
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# Abel



# rdares

**A Blueprint for Tropical  
Forest Management**



BY KARI MUTU

When retired school teacher, Peter Kibuka, watches school children in Bondeni Location of Kenya's Rift Valley run marathons on the slopes of the Aberdares, he knows that life has come full circle. For such an event would have been nigh impossible during his childhood, or that of his children.

For years, the Aberdares youngsters trod a treacherous path to school through the mountain forests, dodging elephants and ill-tempered buffaloes that frequently raided neighbouring farms. School attendance was erratic, dropout rates high and literacy levels low. "Many people remained semi-illiterate and unemployable." Kibuka recalls.

The quandary continued over the decades, multiplying with a growing population reliant on the forest for food, water, timber and grazing. The once indomitable forests of Aberdares retreated mile by mile, and all within it suffered including the large mammals, poached for their meat, hides and horns. Ironically, it is the Aberdare Black rhino, an animal not partial to farm produce, which saved the Aberdares, and Kenya, from the demise of an entire mountain ecosystem.

When the Rhino Ark charity was founded 1988, its primary aim was to raise funds to save endangered



PHOTO BY NIGEL PAVITT

**TOP:** Farmers crops and their own safety are now secure from elephants which now live in harmoniously inside the Rhino Ark fence (centre foreground of picture).

**BELOW:** Wildlife numbers have increased and poaching better under control. Leopard are easily spotted.

rhino by fencing the eastern salient of the mountain, under pressure from poaching and an expanding population. With time it became obvious that the entire 2,000km<sup>2</sup> forest ecosystem, one of Kenya's five water towers, was threatened from forest excisions, illegal logging, charcoal burning and livestock grazing that was de-stabilising rainfall patterns and water flows.

Consequently, the fencing of Aberdares marked the beginning of turned fortunes – for rhinos, trees and humans alike. Indeed, the 21-year, 400km Aberdare fencing project has turned fortunes to the tune of Ksh 39.3 billion annually for the local communities and the country as a whole. This finding is according to a study launched by the United Nations Environmental Programme (UNEP) on the 5th of September, 2011.

"It is a true success story that will be shared at the Earth Summit next year," UNEP Executive Director, Achim Steiner, said at the launch. "The Aberdares conservation efforts underline the extraordinary and wide-ranging returns possible when a more creative, decisive and sustainable approach to managing nature is undertaken."

The Environmental, Social and Economic Assessment (EASA) of the fence around the Aberdare Conservation Area was requested by Rhino Ark and co-funded by UNEP, the Government of Kenya and the Kenya Forests Working Group (KFWG). The Kenya Wildlife Service (KWS), the Kenya Forest Service and the Greenbelt Movement supported the study whose primary aim was to assess the impact of the fence as a management tool.



PHOTO BY NIGEL PAVITT



PHOTO BY: COLIN CHURCH

Men at work building the final section of 400 kms of Fence on Mount Kipipiri, Western Aberdares.

**THE FENCE AND ITS MANAGEMENT HAVE RAISED THE FOREST COVER BY 20.6% FROM 2005 TO 2010, AND REDUCED OPEN AREAS BY 54% DUE THROUGH ECOSYSTEM RECOVERY AND PLANTATION SCHEMES. WILDLIFE POPULATIONS HAVE GENERALLY IMPROVED AND, ALTHOUGH DATA IS INCOMPLETE, ALL INDICATIONS ARE THAT ABERDARES’ RIVER SYSTEMS ARE NOW MORE STABLE THAN THOSE OF MT. KENYA.**

The study employed a basket of techniques, including remote sensing and Geographic Information Systems (GIS) to study land cover variation over the years. Communities in the five Aberdares districts participated in socio-economic surveys via questionnaires, group discussions and key-informant interviews. Major stakeholders were interviewed including the KWS, Foresters and Aberdares-dependant corporations such as electricity generating company KenGen and the Nyayo Tea Zones Corporation. Cost-benefit analysis methods specific

to environmental projects analysed the economic benefits.

EASA findings show that communities have experienced elimination of human-wildlife conflict, improved crop offtake, food security, and elevation of land values – by over 300% in some cases. Poaching, illegal logging and cattle rustling in the unprotected forest are also considerably reduced.

The fence and its management have raised the forest cover by 20.6% from 2005 to 2010, and reduced open areas by 54% due through ecosystem recovery

and plantation schemes. Wildlife populations have generally improved and, although data is incomplete, all indications are that Aberdares’ river systems are now more stable than those of Mt. Kenya.

The study considered effects beyond the mountain range: domestic water to supply to Nairobi and most of central Kenya, irrigation waters to the Tana and Ewaso Ngiro rivers and Lake Naivasha, the 58% water contribution to hydro-power generation on the Tana River, and contribution to commercial-use waters, tourism and agriculture.

According to the study, the restored biodiversity has immense implications for soil erosion and carbon sequestration of excess atmospheric carbon to counter global warming. Add on the biodiversity benefits valued at Ksh 20 billion and the Aberdares contributes Ksh 59.3 billion annually.

It’s a very comprehensive study with impressive findings, but what are observations of the estimated 40,000 families along the fence-line?

Kibuka agrees with the verdict. “In one night a farmer could loose his entire crop to elephants. Many people use



PHOTOS BY: NICEL PAVITT



**TOP:** School children were once prevented from attending school when elephant were marauding *shambas*. School girls in Bondeni, Mweiga on their way to class.

**BELOW:** Fencing allows farmers to make full use of their land.

to spend nights in the cold outdoors guarding their harvest. Not any more.” The EASA confirms a vast decline in cold-nights related morbidity. “School performance is better and there are more children going to school now,” Kibuka adds.

Catherine Kinyanjui is the chairlady of the ‘Karui 91,’ one of more than twenty Community Forest Associations (CFA) formed by the fence-line residents. For her, the biggest transformation has been the changed mind-set and behaviour of people plagued by years of wildlife conflict, dried-up rivers and generally hard living.

“Why spend hours hustling cows up steep hillsides to graze, risking danger from wildlife and receiving poor milk returns when you can practice zero-grazing?” she says. “When there are no more trees for charcoal burning, what will our children eat? The fence has opened up people’s minds.”

The Aberdares farmers have come to understand the forest as once their ancestors did. “We now know which trees are good for beekeeping, and which are good for water preservation,” adds Kinyanjui.

James Githui, Rhino Ark’s Community Fence Manager, liaises

daily with communities along the 400km fence. “The CFAs have taken ownership of their section of the fence. They plant wood lots in their farms and protected forest land, monitor the fence, and report damage or suspicious activities to the authorities.”

Undeniably, public/private partnership that incorporates the forest-edge communities has been at the heart of the Aberdares conservation success. As the benefits of diminished human-wildlife conflict and increased farm income became apparent, community after community around the mountain was convinced to actively support the project, including donating free labour for fence-building.

And, it seems, word has gone out to other montane forest communities of Kenya, namely Mt. Kenya and Mau Eburu, where concerned communities have approached Rhino Ark with the hope of securing their forests. “Eburu is hugely infiltrated by illegal logging and in Mt. Kenya, the communities are faced with deforestation and animals destroying their crops,” says Colin Church, Chairman of Rhino Ark. Consequently, Rhino Ark is set to commence similar fencing projects in Mt. Kenya and Mau Eburu in 2012.

Fencing the 2,000 km<sup>2</sup> Mt. Kenya,

another prime 'water tower' requires Ksh. 1billion and could be completed within four years. Together, Mt. Kenya and Aberdares feed four of Kenya's seven largest river systems supplying water and energy throughout Kenya.

Mau Eburu in Rift Valley forms part of the Mau Forest complex, the largest water catchment area in Kenya. Fencing the 80 km<sup>2</sup> Mau Eburu requires Ksh. 100million of which Ksh. 46.2million has already been secured, including Ksh. 30million worth of materials from the Kenyan Government through KWS.

The Aberdare blueprint for mountain habitat management underlines a fundamental aspect for conserving indigenous forests: Securing the socio-economic success of local communities is integral to stabilising and reviving habitats that are over-extracted from human pressure. Community-driven forest protection will be replicated in Mt. Kenya and Eburu, creating sufficient economic incentive for forest-edge residents to adopt sustainable methods of utilising forest resources. Additionally, a fence helps to redefine state lands and support their protection from excision or illegal activities.

Despite the tremendous achievements in the Aberdares, Rhino Ark and partners are not quite out of the woods. There are still loopholes in the long-term management of the fence. "The fence is still porous due to inadequate funds for maintenance and lack of a fully transparent and enforced fence access policy," says Church.



PHOTO BY: COLIN CHURCH



PHOTO BY: COLIN CHURCH

**TOP:** Good rainfall is vital to Kenya's primary export commodity – tea. Background is Mt Kinangop peak in Southern Aberdares.

**BELOW:** Northern Mathioya river flows clear – a primary feeder stream for Kenya's massive hydro power dams on the Tana River downstream.

The Assessment echoes Church's sentiments. It recommends controlling ecosystem degradation both in the forest and downstream, whilst improving fence management through stronger gate supervision, continuous ecology monitoring, better personnel and logistical support, and incorporating more representation from the private sector and civil society.

Without this multi-faceted approach, the ramifications are immense: increasing water shortages in Nairobi that relies almost entirely on the Aberdares, decreasing electricity supply, jeopardy to over Ksh. 130billion worth of agriculture and floriculture, and a perilous future for thousands of smallholder farms.

Additionally, the study stresses the role of local communities that need more sensitisation on the importance of conservation, and further capacity-building through improved road, water, agricultural and social infrastructure to minimise their dependence on the protected forests.

As I walked along a section of the fence in the Northern Aberdares

recently, the Kirui 91 members proudly pointed out acres of forest they had replanted in 2010 with 25,000 tree seedlings. The ground is scattered with zebra and antelope dung and across the valley, large brown shapes are seen meandering through the trees. "Elephants," remarks one a member, and we all stop to watch.

A few years ago one could never have imagined such a scenario - farmers pausing to watch wildlife and co-existing peacefully in close proximity to elephants. Through creative public/private partnership, harmony has been restored between the Aberdare communities, the environment and wildlife, and a home-grown blueprint developed for securing the future of other tropical mountain forests. ●

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**KARI MUTU** is a Marketing and Sales Manager at Great Plains Conservation, a conservation and ecotourism organisation. She has Bsc. in Botany and Zoology from the University of Nairobi and is a freelance writer focusing mostly on tourism and conservation topics.

# A Diamond in the Rough

## Hirola conservation in Ijara, Kenya

BY ABDULLAHI H. ALI AND JACOB R. GOHEEN

The Hirola (*Beatragus hunteri*) is a poorly-known antelope endemic to the Horn of Africa, from southeastern Kenya northward to southern Somalia. For decades, its taxonomic classification has vexed scientists: it was initially classified as a subspecies of Hartbeest, and then as a subspecies as Topi, before being recognised as distinct enough to merit its own genus.

In 1965, Louis Leakey discovered fossil remains of a congener—*Beatragus antiquus*—in Tanzania’s Olduvai Gorge, and work by Leakey, Gentry, and others concluded that Hirola were probably common ancestors of both Hartbeest and Topi. Subsequently, Kingdon proposed that the evolution and expansion of Hartbeest throughout East Africa over a million years ago might have led to the Hirola being restricted to its current range, north and east of the Tana River to a transitional region along the Kenya-Somali border, where grasslands give way to thick bush.

In addition to its unique taxonomy, the Hirola also has the unfortunate distinction of being one of the most—if not the most—endangered antelope in sub-Saharan Africa. Indeed, the Hirola has been identified as one of the highest-ranking mammals on the Zoological Society of London’s EDGE (Evolutionarily Distinct and Globally Endangered) of Existence Programme, which seeks to promote understanding and conservation of globally-endangered species that have few living relatives.

Although they have never been common, Hirola have dwindled in numbers from roughly 10,000 in 1973 in Kenya to fewer than 500 today. It is likely that Hirola have been wiped out

in Somalia, although a small number may persist in extreme southwestern Somalia. Hirola have been legally protected in Kenya and Somalia since the 1970s, but their numbers have declined by more than 80% since 1976. Remaining populations occur almost solely on pastoral lands with no formal protection, while the few conservation areas that do exist within the Hirola’s native range (e.g., the Arawale National Reserve and the eastern part of the Tana Primate National Reserve) lack adequate protection and attention from the international conservation community. Thus, ironically, the Hirola ranks among Africa’s greatest conservation concerns, but public knowledge regarding its plight is almost entirely lacking outside of Kenya.

Because of historic, political instability in this area, it has been difficult to pinpoint the reasons underlying Hirola declines, although it is likely that many factors underlie this population crash. From the 1960s to the 1980s, Butynski, Kock, and others documented a series of disturbances—overgrazing, fire suppression, and local extinctions of Elephants and Black rhino—that occurred in Ijara, Fafi, and Garissa Districts. All three of these factors tend to favour the growth of trees and shrubs at the expense of understory plants, particularly grasses. Indeed, a recent analysis of satellite imagery demonstrates a slow but steady conversion of savanna grassland to *Acacia refeciens*-dominated bush over the past 30 years

The geographic range of Hirola has contracted with this shift in vegetation types, such that it now persists only in the small fraction of its historic range that is relatively open, and not dominated



PHOTO BY: PAOLO TORCHIO

by trees. Because Hirola are pure grazers that rely on grasses like *Chloris*, *Cenchrus*, and *Digitaria* throughout the year, these results imply that the chances of Hirola recovery are low, so long as their preferred forage remains rare in Ijara. In addition, the increased cover afforded by trees and shrubs might result in more efficient killing of Hirola by predators relative to historic levels of predation in open, grassy expanses.

In 2011, and along with a team representing the Hirola Management Committee, the Kenya Wildlife Service, and the Northern Rangelands Trust, we initiated work to answer the following questions that are critical to understanding and (hopefully) curbing declining numbers of Hirola. These questions were identified by Butynski over 10 years ago as knowledge gaps

that were necessary to fill to successfully conserve the animal.

First, what is the relative importance of range degradation, competition with livestock, and predation in driving the continued decline of hirola in Ijara? Answering this question requires conducting a series of repeated surveys, over many years, to document the birth and death rates for male, female, juvenile, and adult Hirola in herds inhabiting areas with different levels of grass cover, livestock, and predators. From this data, we can build population viability analyses (PVAs), tools that can project the future status of populations under various environmental scenarios. Currently, we are conducting such work in Arawale National Reserve, Gababa Community, and Ishaqbini Conservancy to construct the building blocks necessary for PVAs. Armed with this knowledge, we will be able to 1) assess how important predation, for example, is, versus range quality in driving declines of Hirola; 2) estimate which herds of Hirola have the best chance of persisting 10, or 50, or 100 years into the future; and 3) inform which management solutions will provide the best “bang for our buck” to maximize chances for Hirola recovery.

Second, what range management practices can be taken to offset the

negative effects of tree encroachment on Hirola, while simultaneously permitting livestock production through traditional pastoral practices? Because both Hirola and cattle are pure grazers that depend on high-quality, open range, Hirola declines can be regarded as the proverbial “canary in the coal mine”: they indicate chronic range degradation under which both Hirola populations and cattle grazing will be very difficult to maintain over the long-term. Potential solutions that might enhance the long-term compatibility of Hirola and livestock include, but are not limited to, ripping and reseeding large areas of range, prescribed burning, and holistic livestock management.

Finally, and most importantly, the success of our work hinges on close collaboration with Somali pastoralists, whose involvement is absolutely key to the long-term conservation of this species in its native range. In 2010, we administered a structured questionnaire to homesteads in Arawale, Gababa, and Ishaqbini. We made inquiries as to historical Hirola distribution in the region, attitudes toward Hirola, threats to livestock of humans from Hirola, threats to Hirola from people, and the future of wildlife in the areas. We were pleasantly surprised by the enthusiasm and support for our work

by local communities. We appointed and trained three community scouts in each area as part of our team to assist in Hirola research as a part of community capacity building.

Through our work, we hope to better understand and thus curb declines of this wonderful animal. Our work is supported through the following generous organizations: Association of Zoos and Aquariums, Denver Zoo, the Haub School of the Environment and Natural Resources at the University of Wyoming, Idea Wild, International Foundation for Science, Mohamed bin Zayed Species Conservation Fund, National Museums of Kenya, St. Louis Zoo, and the Rufford Foundation. ●

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**ABDULLAHI H. ALI** has been working on wildlife conservation in eastern Kenya for the last seven years. Mr. Hussein has extensive experience in community conservation around his hometown of Garissa. He is a member of the University of Wyoming’s Program in Ecology, where he is carrying out his dissertation work on the conservation of hirola in Ijara.

**JACOB R. GOHEEN** is an assistant professor in the Departments of Zoology/Physiology and Botany at the University of Wyoming who works on ecosystem responses to declines and extinctions of wildlife.

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## In an era of deforestation, a forest fragment found

BY LUCA BORGHESIO AND LAWRENCE WAGURA

**T**he Taita Hills are a small mountain massif located in southern Kenya, not far from the Tanzanian border. The unimpressive maximum elevation, about 2250m, belies the high biological importance of these small mountains, which host several endemic species of vertebrates, invertebrates and plants. Geologically,

the Taita form the northernmost end of the Eastern Arc, a range of mountains stretching from Northern Mozambique through Tanzania and Southern Kenya. Old age, estimated to more than 20 million years, isolation and climatic stability are the causes of the outstanding biological richness of the Eastern Arc, which was originally

entirely cloaked by thick rainforest. Unfortunately, stable climate and high rainfall are also favourable to agriculture, and rates of deforestation have been high in the last century. In the Taita, it is estimated that more than 95% of the original vegetation has been lost, and currently less than 500 hectares of forest remain, scattered in

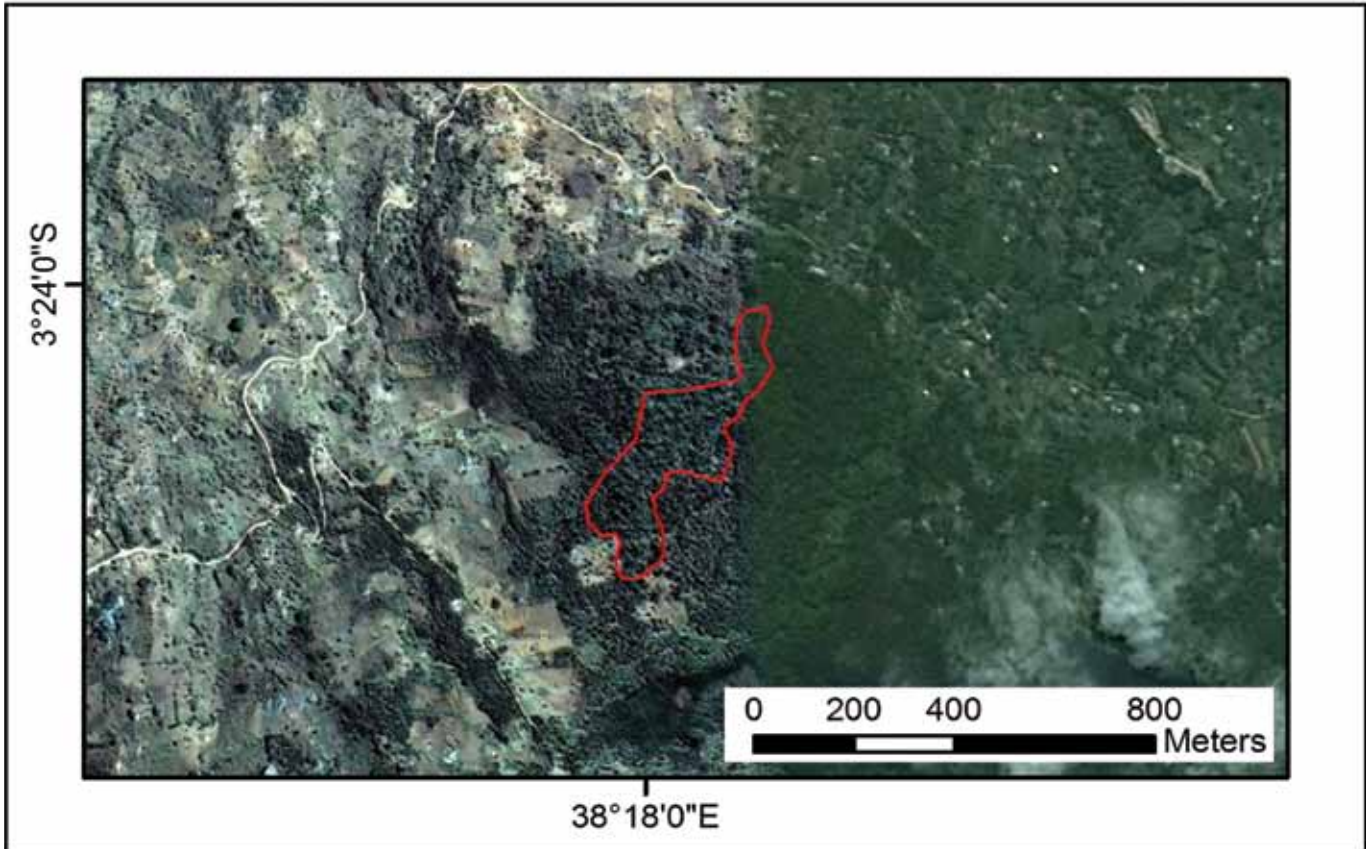


Figure 1. Aerial photograph of Msidunyi forest, from Google Earth (image taken on 18/10/2001). The image shows the indigenous forest patch completely surrounded by plantations of exotic trees (*Cupressus lusitanica*, *Eucalyptus* spp, *Acacia mearnsii*).

**BELOW:** *Psychotria petiti*, a Taita endemic

twelve small fragments, some of which are less than one hectare in size.

Most of the endemic flora and fauna of the Taita Hills is highly threatened due to the very small amount of habitat left, and therefore each bit, however small, of indigenous forest has a high



biological value and hosts populations of unique species, many of which have not yet been described by scientists.

In October 2011, while performing an ornithological survey in the Taita Hills, we were surprised to discover a so far unknown fragment of forest. The site, called Msidunyi by local people, apparently escaped detection up to now as it is completely surrounded and hidden by a large plantation of non-indigenous trees.

Based on a reconnaissance that we did on October 3, 2011, Msidunyi contains about 7.2 hectares of indigenous forest showing no traces of logging and few signs of human disturbance. The tree canopy is continuous, 15-20m tall, and elevation ranges between 1830 and 1980m.

Preliminary observations show the existence of a diverse forest flora, with a canopy composed by trees such as *Strombosia scheffleri*, *Schefflera volkensii*, *Podocarpus* sp, *Xymalos monospora*, *Albizia gummifera*,

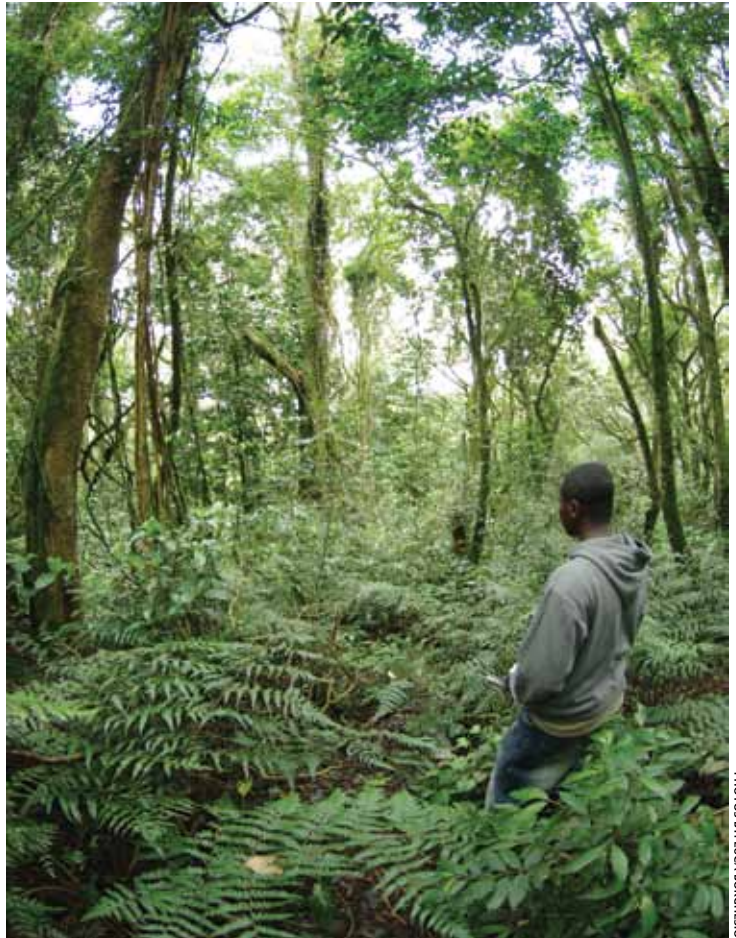
*Syzygium micklethwaitii* and *Tabernaemontana stapfiana*. The mid strata and lower layers are characterized by abundant ferns, and by *Euphorbia engleri*, *Dracaena steudneri*, *Turraea holstii*, *Pauridiantha paucinervis*, *Chassalia parvifolia*. Endemic and narrowly distributed plant species were also represented: we observed *Psychotria petiti* and *Impatiens teitensis* subsp. *teitensis* (Taita endemics), as well as the tree *Dasylepis integra*, endemic to a small range in the northern sector of the Eastern Arc.

Among the fauna, we observed two Taita endemic butterflies (*Papilio desmondi teita* and *Cymothoe teita*), and two of the three endemic birds, the Taita White-eye (*Zosterops poligaster sylvanus*) and the Taita Apalis (*Apalis fuscigularis*). Msidunyi's might be a particularly important stronghold for the apalis, whose global population is rapidly decreasing and now probably reduced to less than 500 individuals. Other forest birds included Stripe-



**TOP:** Taita apalis (*Apalis fuscicularis*)

**RIGHT:** A view of the undergrowth of Msidunyi forest.



PHOTOS BY: LUCA BORGHESIO

cheeked and Cabani's Greenbul, White-starred Robin, Lemon Dove, African Goshawk, Hartlaub's Turaco and Yellow-throated Woodland Warbler.

Our preliminary data suggest that Msidunyi might be one of the biologically richest forest fragments of the Taita Hills. It is surprising that it escaped detection up to now considering that several biological surveys have been carried out in the area in the last 15 years. Based on size alone, Msidunyi is the sixth largest forest in the hills. More detailed biological surveys are needed to confirm the conservation value of this small forest patch, but the presence

of a diverse flora and fauna, including endemic and globally threatened species, already suggest that Msidunyi is an important refuge for rare species and a stepping stone for preserving biological connectivity between the isolated forest remnants of the Taita Hills.

Actions are urgently needed to preserve Msidunyi from destruction. Currently, the private owners of the land currently seem not interested to exploit their land and turn it into exotic plantations or cultivation, but there is no guarantee that this will last in the future. Already, aerial photographs show that two small cultivated fields

have been carved along the forest edges in the last few years. The remaining forest might not survive for long without active protection. ●

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**LUCA BORGHESIO** is an Italian biologist, natural history consultant and a Research Associate of the National Museums of Kenya. His main research interest in Africa focuses on the ecology and conservation of montane forest biological communities.

**LAWRENCE WAGURA** is an intern of the Zoology Department, National Museums of Kenya, who has been attached to several ornithological research projects in the Taita hills over the last five years

### Acknowledgements

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# GO visit

a Seychelles island – guilt-free

An aerial view of Cousin Island Special Reserve.



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**BY LIZ MWAMBUI**

**C**ousin island in the Seychelles is the perfect place for the environmentally conscious to visit. Go there, bask, bird and enjoy, and you'll be helping save the planet from greenhouse gas emissions.

In 2010, Cousin made international news when it became the world's first carbon neutral nature reserve. The Cousin Island Special Reserve got this standing when Nature Seychelles, the non-governmental organisation that manages it, carried out a rigorous assessment of the island's footprint and offset it by investing in carbon

credits purchased from a project in Darfur, Sudan.

Nature Seychelles Chief Executive Officer, Nirmal Jivan Shah, explains why his organisation went to these lengths: "We wanted our eco-visitors to come to Cousin guilt-free, knowing their carbon footprint has been neutralised," he says. Most visitors to the island reserve arrive via long haul flights particularly from Europe followed by boat trips. For the climate-conscious visitor this could be off-putting.

But travel to distant locations has also become the target of media and green campaigns, which discourage

such gas-guzzling and carbon-emitting journeys.

One campaign in Germany in 2008 had as title "Sylt instead of Seychelles." Sylt is an island in northern Germany. Such campaigns can have a serious effect on ecotourism locations such as Cousin Island and they rang alarm bells with Nature Seychelles.

"As the organisation managing Cousin Island Special Reserve, applauded as one of the best long term examples of the successful marriage of tourism and conservation, we became concerned about the impact of such



The island has close to 40 resident Aldabra Giant Tortoises.

PHOTO BY: ROBIN HANSON

media campaigns. Our main concern was the possible negative effect they could have on tourism revenues that go towards conserving Cousin and towards other environmental projects we carry out," Shah says.

Cousin is self-financed through eco-tourism. One hundred percent of revenues go into reserve management, conservation and research activities, education and public awareness programmes, and training for wardens and practitioners.

Cousin Island became a Nature Reserve in 1968 and was declared a Special Reserve in 1975 by the Government of Seychelles. The Reserve is 27 hectares, including the surrounding marine area up to 400 metres offshore. It is an Important Bird Area (IBA), a distinction given by BirdLife International to identify areas vital for bird conservation, and an IUCN

**COUSIN IS SELF-FINANCED THROUGH ECO-TOURISM. ONE HUNDRED PERCENT OF REVENUES GO INTO RESERVE MANAGEMENT, CONSERVATION AND RESEARCH ACTIVITIES, EDUCATION AND PUBLIC AWARENESS PROGRAMMES, AND TRAINING FOR WARDENS AND PRACTITIONERS.**

Protected Area Category 1a, which is a strict nature reserve where people's visits and their impacts are controlled.

In the 1960s the island was a loss-making coconut plantation. Then it was discovered that the Seychelles Warbler, on the brink of extinction with only 26 individuals left, lived there in a small patch of mangrove. The International Council for the Protection of Birds (now BirdLife International) started a campaign to rescue the "rarest bird in the world" as the warbler was then known, and in 1968 bought the island for £17000. "This became the flagship species for the island and Cousin's purchase became the triumphant

turning point for the warbler," says Shah, whose organisation took over management of the island in 1998, and is the Seychelles BirdLife Partner.

After its purchase, Cousin's regenerating coconuts were continuously cut back, old trees allowed to die off naturally, and native vegetation encouraged to regenerate, Shah explains. The Seychelles Warbler numbers increased and quickly reached carrying capacity.

"From here the warbler was re-introduced to the islands of Cousine and Aride to boost its population. The goal of its rescue plan was to have 5000 individuals flourishing on five

**1968**

Year Cousin Island became a Nature Reserve.

**1975**

Year Cousin Island became a Special Reserve.



PHOTO BY: NATURE SEYCHELLES



PHOTO BY: GLENN JACKWAY

**THIS PAGE TOP:** Lesser noddies descend on the island in large numbers during breeding season.

**INSERT TOP:** Seychelles Magpie Robins were originally only found on Fregate island and were saved from extinction after populations were established on Cousin and other islands.

**INSERT BOTTOM:** White-tailed tropicbirds, one of seven Seabirds found on Cousin, adults nest on ground.

**BELOW:** White tern, a seabird found on Cousin.

islands and to have it down-listed in the Red Data list. Nature Seychelles subsequently undertook a fourth translocation to Denis Island in 2004 and the population is flourishing there. A fifth translocation has just been undertaken to Fregate Island. "Hopefully, we will be able to take the species off BirdLife International's list of threatened birds of the world, the first time this would happen for a species once classified as Critically Endangered," Shah says.

The success registered with the warblers was followed up by

improvements in other species notably the Seychelles Magpie Robin. The first step in the rescue of the this bird, also once on the brink of extinction, was the establishment of a population on Cousin. Other bird transfers to and from islands have been carried out.

"The methods for re-introduction themselves have become the blue print for other island bird rescue. It involves the restoration of whole islands by planting forests and removal of alien predators such as rats - all mammals to Seychelles, apart from bats, were introduced and all became predators and destroyed birds - and bird introduction. This is the way we have been able to save some of the rarest birds in Africa ," explains Shah.

The island boasts a huge number of species and habitats. The previous coconut plantation is now mainly a native forest. There are wetlands where fresh water attracts dragonflies and moorhens; a hill creates ideal nesting sites for Shearwaters and Bridled Terns; on the seashore, crabs and shorebirds abound. It is home to a number of reptiles such as giant tortoises and five endemic lizards, giant millipedes and hermit crabs. Seven species of nesting seabirds, in numbers exceeding 300,000 individuals call Cousin home. Nature Seychelles coordinates a local



PHOTO BY: NATURE SEYCHELLES

stakeholders group, the Seychelles Seabird Group, that monitors seabirds across Seychelles.

Some 300 species of fish are found in the island's marine area and prior to the coral bleaching of 1998, it had the largest fish biomass of any reserve in the granitic Seychelles. It is the most important nesting site for Hawksbill turtles in the Western Indian Ocean.

One of the biggest conservation successes of the island has been recorded with the Hawksbill. Started in

1972, Cousin has what is believed to be the longest-running turtle monitoring programmes in the Western Indian Ocean. In 2010, new analysis of data collected from this programme revealed a phenomenal eight-fold increase in the abundance of nesting hawksbill turtles since the programme was started. The increase is directly attributed to the ongoing turtle conservation programme.

"These findings are a validation of the important work carried out on Cousin." says Shah. "It is long awaited proof that conservation works even for long lived and critically endangered species like marine turtles."

Turtle populations are notoriously difficult to census, relying upon long-term monitoring of females at their nesting beaches. This makes the monitoring on Cousin a mean feat.

Monitoring commences each season when wardens observe the first evidence of a turtle emerging onto the beach to lay her nest. This generally occurs around late August, and turtles

continue to emerge until late February or early March. Beaches are periodically patrolled. A complete patrol involves a full circuit of each of the 4 beaches on the island and varies in duration from 30 minutes to 3 hours. Females emerging are individually tagged, and nesting data collected from nesting attempts observed through tracks and actual turtle sightings.

"All this work would not be possible without the human resources paid for by revenues received from visitors," says Kerstin Henri, the organisation's Chief Economist. Cousin is managed entirely by local people who live on the island. The staff comprises an Island Coordinator, a Conservation Officer, and six Wardens. Cousin's success has come through deliberate efforts to provide an excellent ecotourism product and its operations are aligned to international ecotourism standards.

Visitor numbers are controlled by allowing visits during prescribed times only - limited to half days, four days

**TOP:** Local school children visit the Reserve.

**INSERT TOP:** Red hermit crabs. Crabs play an important role as scavengers - Cousin wardens call them the vacuums of the island.

**RIGHT TOP:** Wright's skink are one of 5 endemic species of skinks of Seychelles.

PHOTO BY: GLENN JACKWAY



a week. Local tour operators from the nearby island of Praslin take visitors to Cousin where they are then transferred to the island's boats, the only ones allowed to land on shore to prevent the accidental introduction of pests onto the Reserve. Once on Cousin, a guided tour is given to all visitors by the trained and multi-lingual wardens ensuring visitors increase their appreciation of nature.

Visitor safety is of high priority and visitor facilities are provided.

A Code of Ethics is circulated to all visitors and operators. Wardens ensure that adherence to regulations is complied with, so quality of experience and low impact are maintained. To reduce impact there is no picnicking, overnight accommodation, or taking of specimens or souvenirs. Wardens

may stop anyone suspected of violating Reserve regulations. Distance is kept from nesting birds and turtles. Mooring buoys have been installed for boats anchoring offshore.

About 11,000-14,000 tourists visit the island each year. Thousands of visitor comments left behind are a testimony to the island's unique experience: "National Geographic live!... Fantastic island, fantastic birdlife, fantastic guide... Keep doing your great work!" they say.

"Our challenge is to keep maintaining the integrity of the island as a cradle of biodiversity and popular tourism site, so that we can keep carrying out the important work we do." Shah concludes. ●

**LIZ MWAMBUI** worked at the Kenya Forests Working Group as outreach officer for over seven years, and was part of the high profile campaigns for forests KFWG runs. She is now Communications Manager with Nature Seychelles, a leading NGO in the Western Indian Ocean and BirdLife Partner in Seychelles. Liz holds an MA in Communications for Development but was initially trained as a Graphics Designer at the University of Nairobi and worked in marketing and advertising before falling for conservation work. She was born in wildlife-rich Taita, Kenya

## Why is this a green initiative?

The Cousin initiative is an example of one enterprise recognising how much carbon dioxide it generates (its "carbon footprint") and supporting a parallel reduction in carbon dioxide by supporting a project elsewhere. It could be tree planting in Kenya or Tanzania, but in this case it involves energy-sensitive initiatives in Darfur, whose conflict is often termed the world's first Climate Change war because of the disputes between pastoralists and nomads over fast-dwindling grazing and land. (Editor).

Keeping Cousin carbon neutral is an on-going programme

advised by Carbon Clear, a leading European carbon management company. Each year carbon credits are purchased through investment in verified projects in poor and developing countries.

The cooking stove project in Darfur, Sudan is an energy efficiency project. It provides modern stoves to low-income families to replace their traditional 3-stone fires that rely on unsustainable wood sources. The modern stoves reduce greenhouse gas emissions by moving away from wood and charcoal to more efficient fuels and cook-stoves. The switch to efficient fuels also reduces

indoor air pollution and improves health for the participating families. This programme is administered by local women's cooperatives.

Two other projects in Indonesia and Brazil have been recipients of the carbon offsets funds so far. The Brazilian project prevents deforestation and protects the Cerrado Biome by using agricultural waste in place of deforested wood to fire community based ceramic kilns. The Indonesian project made a number of vital upgrades to an existing conventional coal-fired power to help it switch to geothermal.

PORTFOLIO

# AMAZING AMBOSELI

*By Paolo Torchio*











# THE YOUTH SHOW THE WAY FORWARD FOR CONSERVATION

Thousands of Kenyan students were asked the question: "Why save Kenya's wildlife and forests." Their answers came in the form of compelling words and pictures. The question was the central point of a newly-relaunched competition which EAWLS helped sponsor and organize together with the Wildlife Clubs of Kenya. The 2011 contest was a merger of an art and essay contest previously organized by the Wildlife Clubs of Kenya and an essay and Public Speaking contest by the Satima Trust. This organization was founded to promote the work, thinking and life of Imre Loeffler, a former Chairman of EAWLS, a writer, pilot and surgeon.

It attracted thousands of entries, proving that the keys to conservation in East Africa lie in the hands of the young. Some of the art work is reproduced here. The winners were presented with their awards in a ceremony at the African Wildlife Foundation Headquarters in Nairobi attended by dignitaries, parents and organisers and shortly afterwards headed off for a six-day all-expenses paid tour of lake Nakuru National Park and the Rift valley lakes and tourist attraction sites.

The competition was generously supported by the University of Nairobi, Lewa Conservancy, Ol Pejeta Conservancy, The Star Newspaper, Lino Typesetters, Kenya Wildlife Service, African Wildlife Foundation, Highlands Mineral Water Ltd, African Fund for Endangered Wildlife and the Text Book Centre. We are deeply grateful for their support. The competition will be held again in 2012 - details to be announced in The Star and other media.

**Richard Rono - East African Wild Life Society**





Hussein Palkhi, 11 years old, std 4, Al Madrasa Tus Saifiya Burhaniyah, Nairobi

CONSERVATION COMPETITION



Husain Aziz Hebatullah, 8 years, std 1, Al Madrasa Tus Saifiya Burhaniyah, Nairobi



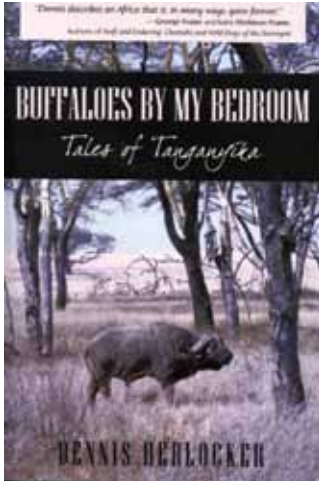
Ranya Gowry, 11 years, std 6, Arya Vedic, Nairobi



Tushar Gupta, 9 years, std 4, Arya Vedic, Nairobi



Michael Daman, form 3, Makueni boys high, Makueni



**BUFFALOES BY MY BEDROOM**  
**Tales of Tanganyika**  
 By Dennis Herlocker  
 Published by iUniverse, Inc,  
 New York  
 ISBN-978-1-4401-4724  
 (paperback)

"Picking up the mail, I found that two rolls of film containing fabulous scenes, unlikely to be encountered again (including a pack of wild dogs – Cape hunting dogs – bringing down a

gazelle), had returned from the developer overexposed. Then I discovered to my dismay that most of the plant specimens I had collected over the last several months for the Conservation Unit's reference herbarium were useless. I hadn't changed the newspapers between plants often enough and the plants never dried out. Plant after plant was either mouldy or just disintegrated into little pieces when picked up. I felt like an old employee upon

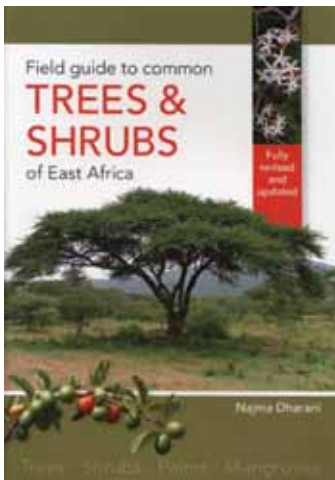
learning that his company's pension scheme no longer existed. All that time and effort wasted. Wasted!"

If that bang-the-table, kick-the-chair frustration with Africa sounds familiar, then much of Dennis Herlocker's thoroughly likeable memoir will also resonate with readers familiar with the continent, both young and old. It is still a beguilingly beautiful but maddeningly difficult place to work. Herlocker balances the two extremes in an engaging and sympathetic way, and tells his story compellingly. It is full of anecdotes about people, which give it depth and personality, but the landscape that is the backdrop to this adventure is the main character.

This is a book about things that happened when the author was Assistant Conservator (Forests) in the Ngorongoro Conservation area of what was then Tanganyika more than 45 years ago. Sent to this country-in-waiting as a Peace Corps volunteer (with three years of forest expertise), he became a forester in Ngorongoro.

Herlocker's sense of wonderment remains intact, despite the lapse of time between the event and its commitment to paper. The book is full of brushes with people and animals and places that can only be described as an adventure, and the reader lives that adventure with him. A very satisfying read for those whose own sense of wonderment at the continent remains intact.

**Reviewed by: Andy Hill**



**Field Guide to Common Trees and Shrubs of East Africa**  
 By Najma Dharani  
 Struik Nature Cape Town South Africa  
 2nd Edition 2011, 328 pages, A5 Format

The first edition of this book was published in 2002 and was favorably reviewed in the natural history press for being a most useful publication

filling a needed gap but pointed out there were quite a number of errors and omissions.

In reviewing the 2nd edition, it has been compared with its predecessor and after just turning a few pages it was immediately noticeable that this is a considerably improved book.

In the Tree Section some 58 additional species have been included of which only THREE are exotics, which is excellent news for those indigenous tree enthusiasts. Similarly in the Shrub Section there are 37 additional species and they are all indigenous. The Palm and Mangrove sections remain the same but the Illustrated Glossary has been improved with the diagrams in colour.

The format has been changed so that all the additional information could be fitted into a book that is only eight pages longer than the original version. This has meant instead of one page per species there is now two and subsequently the photos

are reduced in size. This does not detract as more, and in many cases, better photos are used together with detailed photos of flowers and in some 70 species there are photos of their distinctive bark.

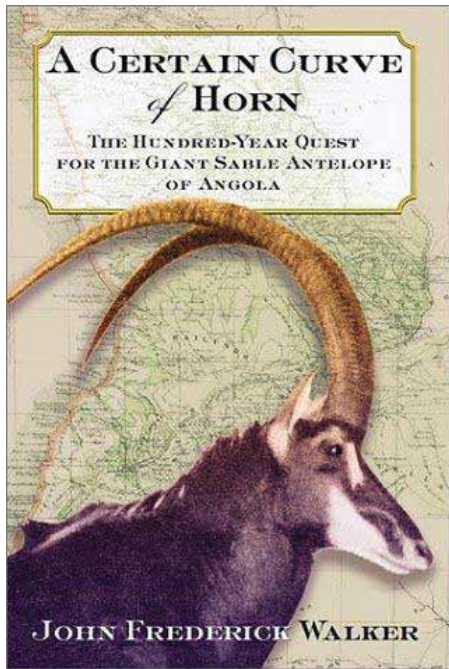
As for the first edition it remains a mystery as to why it was thought necessary to have separate sections for the trees and shrubs as the dividing line between the two is never clear. Does the height of the plant influence the decision or its growth habit? Why put *Ehretia cymosa* in the shrub section and describe it as a shrub or small tree growing 12 m. The indigenous cycad, *Encephalartos hildebrandtii*, is included in the Tree Section!

Keeping up with the changing of the botanical names of plants has always been a problem and is more so today than ever due to the frequency of the influence of DNA analyses. This second addition has done its best to be up to date with names but why use the very outdated name of *Aloe bainesii* when it was recognised many years ago that it was correctly *Aloe barberae*?

Many countries in the world these days suffer from alien invasive species, including Kenya. It would have been good if this book could have taken the opportunity to strongly warn against planting species that are currently recognised as causing a problem. There is mention in some cases of species being "almost naturalised" when it should say that these species have become very invasive with a warning not to plant.

As for the first edition, this book contains many exotic species but these are well outnumbered by indigenous. All in all this second addition is a big improvement on the first and is well worth having.

**Reviewed by: Barry Cameron**



**A CERTAIN CURVE OF HORN**

**By John Frederick Walker**

**Grove press**

In *A Certain Curve of Horn*, SWARA contributor John Frederick Walker tells the story of one of the most revered and endangered beasts of Africa: the Giant sable antelope of Angola, a majestic, coal-black quadruped with breathtaking curved horns over five feet long.

As he follows the trail of this mysterious animal, Walker interweaves the stories of the adventurers, scientists, and warriors who have come under the thrall of the beast, and how their actions would shape the fate of the Giant sable antelope and the history of the war-torn nation that is its only home.

First published in 2002, Walker's account of his quest for Angola's legendary animal was called 'riveting,' 'fascinating,' and 'compelling' by reviewers, who compared it to Peter Matthiessen's classic, *The Snow Leopard*.

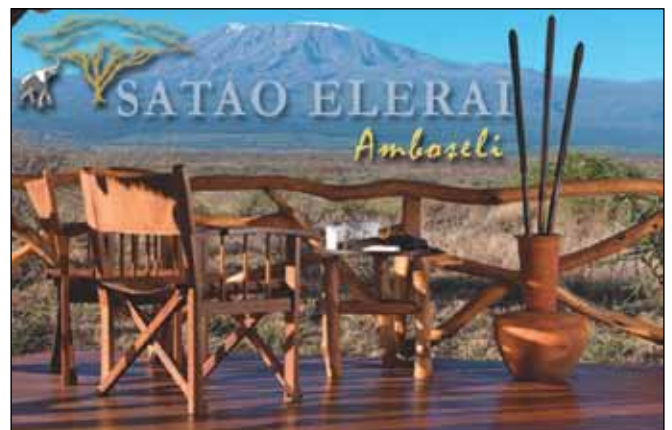
Walker joined the first post-war expedition that found evidence that the iconic creature had survived the country's horrific 27-year-long civil war, but years passed before it could be photographed and discovered to be on the brink of extinction. Now Walker brings the story full circle, taking the reader on a last-chance expedition to find Africa's most magnificent antelope and the heart-pounding conservation triumph of its rescue.

John Frederick Walker's writing has appeared in *The New York Times*, *National Geographic Traveler*, *Africa Geographic*, *SWARA* (2010:03) and numerous other publications. He has been travelling to and reporting on Africa since 1986 and is also author of *Ivory's Ghosts: The White Gold of History and the Fate of Elephants*.

*A Certain Curve of Horn* (Revised & Updated E-book Edition) is available for purchase at Amazon, B&N, Apple, and Kobo.

Visit his website at: [www.johnfrederickwalker.com](http://www.johnfrederickwalker.com)

Reviewed by: **Andy Hill**



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# By their bar codes shall a YE know them

BY PETER VON BUOL

International scientific researchers are developing a computer programme which uses the stripes and spots of individual animals to quickly identify individual Plains Zebras and which may soon be used to identify other wildlife species, including Grevy's Zebras, giraffes and snow leopards.

StripeSpotter, was developed jointly by researchers at Kenya's Ol Pejeta Conservancy, Princeton University's Equid Research and Conservation Laboratory and the University of Illinois-Chicago's Computational Population Biology Laboratory.

According to Tanya Berger-Wolf, one of the programme's co-developers and an associate professor of computer science at the University of Illinois-Chicago, her research team believed it was important to make the programme free and easily accessible.

"It was important to us to have it available as an open-source, free programme to be used for scientific and conservation purposes. This is about science and not about business," said Berger-Wolf, whose team began their research with Plains Zebras and later started a database to identify individual Grevy's Zebras.

"There had already been a computer-assisted program for Grevy's Zebras but it was very expensive and a human also needed to spend 10 minutes to outline an individual animal," said Berger-Wolf.

The program developed by Berger-Wolf's team uses an algorithmic approach to automatically and accurately identify individual animals.

"Imagine a line going across the side of a zebra's body, from shoulder to the rump. We read blocks of white and black along that line and record their lengths (in pixels). In fact, we record their relative length ratios, which do not change with distance and slight rotations and angles. We then draw 10 of those imaginary lines and the total sequence of numbers along those lines comprises a StripeCode. For a new photograph to be identified, we compare its computed StripeCode to the StripeCode of each already identified and stored zebra in the database. We use an algorithmic approach similar to the one used to compare two DNA

sequences to each other. The programme returns the top-ranked matches for the human to verify. Once the identification is verified, the photograph is added to the database with the zebra identity," said Berger-Wolf.

Development of the programme began as a graduate student's project during a field-ecology course in Kenya in January 2010. Mayank Lahiri, now a Ph.D, began work on a programme for automatic identification of zebras from photographs and which formed the basis of StripeSpotter. "Our original data-set started with 6,000 photographs of 196 individual zebras. Rosemary Warungu, of the Ol Pejeta Conservancy, sat and identified all the individual animals and



ZEBRAPRINTING BY MAYANK LAHIRI. LICENSED UNDER A CREATIVE COMMONS ATTRIBUTION-SHAREALIKE 3.0 UNPORTED LICENSE.

Visualization of the StripeSpotter program (The picture won the 1st place in the University of Illinois' Image of Research competition 2011).

then the program analysed each of photographs. We didn't know it would work! After the results came in, I was happy and surprised," said Berger-Wolf, whose own work with zebras started about eight years ago.

Until the advent of StripeSpotter, collecting the information needed to study the zebra social-networks had been time-consuming and tedious.

"Ideally, we would collect the information on the interactions among zebras, create a social network out them, analyse it, and, hopefully, gain an insight into why zebras hang out with each other, how leadership emerges among them, and how and why some individuals are more

important than others for the population as a whole. However, to really collect data on zebra populations we needed to track many individual zebras over long periods of time. We tried GPS collars but they are too expensive and intrusive. They were also dangerous, unreliable and inaccurate for the interaction data we needed. A better source of data is the many human eyes (field assistants, scouts, nature preserve visitors, scientists and others) with cameras to get

information on where each zebra is found and with whom. But to do that, we must be able to identify each individual zebra in those photographs efficiently and accurately [and StripeSpotter was found to do that]," said Berger-Wolf. ●

**PETER VON BUOL** is an adjunct professor of journalism at Columbia College-Chicago. He has been writing for East African publications since 1998 when he wrote an article about the rediscovery of a cave described as the Tsavo Man-eaters den by a joint-team from the Kenya Wildlife Service and Chicago's Field Museum of Natural History. He contributed an article about the post-Tsavo career of Colonel John H. Patterson's to the current issue of Kenya Past and Present. He is also a regular contributor to BBC Focus on Africa as well as numerous other publications.