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John Nyaga

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CIRCULATION AND SUBSCRIPTIONS

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SWARA OFFICES

C/O EAWLS Head Office
P O Box 20110 – 00200, Riara Road, Kilimani, Nairobi
Tel: + 254-20-3874145 / +254 20 3871437
info@eawildlife.org

LETTERS TO THE EDITOR

swaraeditor@gmail.com

EAWLS WORLDWIDE REPRESENTATIVES

USA

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

NETHERLANDS

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

SWITZERLAND

Therese & Bernhard Sorgen
Erlenweg 30 8302 Kloten

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

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Roseanna Avento
roseanna.avento@kobe.fi
+358405355405

ILLEGAL TRADE IN WILDLIFE PRODUCTS: DEMAND AND SUPPLY PERSPECTIVES

PHOTO BY: ROBERT MACORI



Kenya recently torched 105 tonnes of ivory and 1.5 tonnes of rhino horn at the Nairobi National Park in yet another symbolic event to protest poaching, make people feel ashamed of having ivory, and urge the international community to support calls for a total ban on trade in ivory and other products of endangered wildlife species.

The first ivory stockpile burn took place in Kenya in July 1989. It was one of the actions that galvanized the world to move towards the ban on trade in ivory in response to the loss of more than half of Africa's elephant population over the previous decade. Kenya has since set ablaze five tonnes of ivory in 2009 and another 15 tonnes in 2015.

In the past few years, more and more governments, including the United

States, Malawi, Republic of Congo and China have also destroyed stockpiles of ivory. India will soon follow suit. These actions help to highlight this crisis from local to international level.

In the latest burn, Kenyan President Uhuru Kenyatta said: "No one, and I repeat, no one, has any business in trading in ivory, for this trade means death - the death of our elephants and the death of our national heritage." Kenyatta and his Gabonese counterpart Ali Bongo said they would propose the imposition of a total ban on trade in ivory and rhino horn at the World Wildlife Conference of the Convention on International Trade in Endangered Species (CITES), which will be held in South Africa in September 2016.

Studies have shown that more than 85 per cent of savanna elephant ivory seized between 2006 and 2014 originated in East Africa, mainly the Selous Game Reserve in south-eastern Tanzania and the Niassa Reserve in adjacent northern Mozambique.

Since 2009, over 43 tonnes or 23 per cent of seized ivory stocks were intended for shipment through the port of Mombasa in Kenya, an indication

that East Africa is a major hub of ivory trafficking. In spite of these depressing facts, we draw encouragement from rising cases of reported seizures of illegal trophies within the Kenya borders before they are smuggled out of the country through the port of Mombasa. In fact, more seizures have been made on the African continent than in Asia in recent times. This shows that there is more work being done by governments and government agencies such as the Kenya Wildlife Service (KWS), customs departments and the police. While this is commendable a lot more needs to be done.

The East African Wild Life Society (EAWLS) believes that addressing the poaching menace from both the demand and supply sides requires multifaceted approaches and concerted effort by all parties. The destruction of confiscated ivory is one of the necessary initiatives.

On the demand side, there is need to continuously work with the markets that buy rhino horn and ivory to reduce illegal activities while ensuring that consumers are informed on the effects of illegal trade of wildlife products on the wildlife resources. ►

THE EAST AFRICAN WILD LIFE SOCIETY (EAWLS) BELIEVES THAT ADDRESSING THE POACHING MENACE FROM BOTH THE DEMAND AND SUPPLY SIDES REQUIRES MULTIFACETED APPROACHES AND CONCERTED EFFORT BY ALL PARTIES.

5

Tonnes of ivory Kenya set on fire in 2009

15

Tonnes of ivory Kenya set on fire in 2015

105

Tonnes of ivory Kenya set on fire in 2016

85%

Percentage of savanna elephant ivory seized between 2006 and 2014 originating from East Africa

43

Tonnes of seized ivory stocks intended for shipment through the port of Mombasa since 2009

On the supply end, there is need to reduce the number of rhinos and elephants being killed. This can be done through law enforcement, better intelligence gathering, and the use of advanced surveillance technology in protected areas. Enhanced evidence gathering techniques that lead to successful prosecutions are crucial. Community participation in the management of wildlife resources should also be strengthened with appropriate incentives.

To make the aforementioned a reality, KWS and community wildlife conservancies need more resources to ensure that they are adequately equipped and better armed to counter increasing threats from poachers using sophisticated techniques to infiltrate both protected areas and conservancies.

It is encouraging to see the Chinese government become more engaged in efforts to combat illegal wildlife trade. China has come up with controls and measures to reduce illegal trade in rhino horn and ivory. The country, as

well as other markets, such as Vietnam and Laos, need further encouragement and support from the international community to effect a total ban on ivory and rhino horn trade and crackdown on the illegal market.

EAWLS is deeply committed to advocating and supporting strategic initiatives to address both the demand and supply sides of poaching. Some of the initiatives that EAWLS has undertaken include, but not limited to providing equipment such as tents, binoculars and motorbikes to KWS and community wildlife conservancies in 2014 and 2015 through the support of the Chinese Embassy and the Mara Conservation Fund (MCF). The equipment went a long way in strengthening surveillance and intelligence gathering.

By introducing the Chinese language edition of Swara magazine, the Society hopes to boost awareness and sensitize the Chinese public on the need to curb demand for ivory and become elephant and rhino conservation ambassadors.



EAWLS welcomes any additional support from partners to intensify the war on poaching among other conservation initiatives that we undertake to promote sustainable use of natural resources in the region. ●

Julius Kamau
Executive Director, EAWLS

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Dear Editor,

First of all I would like to welcome on board all the new team, including yourself of course, and say kwa kheri to my old friend Andy Hill.

Your Swara April-June edition was particularly interesting. My view to your question "Why are lions straying from Nairobi National Park?"

Extremely greedy and unpatriotic land grabbers! Reading comments by many Kenyans on Facebook where naturally so much of this issue was posted, they too echo my view.

Yes, it is prime land in the middle of the sprawling Nairobi, but people should realise the importance and uniqueness of this Park and the money it generates.

Luciana Parazzi Basile

Dear Editor,

Swara is a link to Kenya for me, where my husband and I lived for six years, arriving in 1967.

I read your magazine from beginning to end. I especially enjoyed your article about George and Joy Adamson as we were friends.

I often stayed at Elsamere and helped Joy in her work, and she stayed with us in Nairobi when she was filmed in the second film "Living Free". It would make her very happy to know that Elsamere is now a Field Study Center for conservation education. Your article keeps George and Joy's memory alive.

Ursula Coleman,
20 Bayon Dr., South Hadley,
MA 01075, United States of
America

Dear Editor,

Congratulations on another superb issue of Swara. As a teacher, I really enjoyed reading the article by Dr. Paula Kahumbu on Citizen Science and the Twiga Project -- a really informative example of action research in the field.

May I draw your attention a rhino rancher in South Africa who apparently will release 5 tonnes of horn onto the market and, in my opinion, exacerbate the illegal trade in rhino horn for dubious purposes like cures for cancer, aphrodisiac and other "medicines". Link to the story in the Guardian newspaper: <http://www.theguardian.com/environment/2016/may/24/south-african-court-gives-green-light-to-domestic-trade-in-rhino-horn>.

I know that you have several rhino experts who are regular contributors to Swara. I personally would be engaged to learn more about this complex development in South Africa and its implications for the species in Kenya.

Would it be possible to broach the subject with individuals in the South African society in the form of an interview? I do hope that limitations might be imposed before the validity of conservation is undermined by private investment ranchers.

Sincerely,
Rebecca Hodge
Mobile: + 86 135 3984 7659

Dear Editor,

I am following up on your article on page 11 of the April-June issue

of Swara entitled "Why are lions straying from Nairobi National Park?"

The lead article in the New York Times dated April 6, 1978 was entitled: **"Nairobi is barring its doors against a pride of hungry lions."**

I was interviewed by John Darnton of the New York Times having lost two safari ponies and a third horse a few nights later (March 31) to a pride of lions that had escaped from Nairobi National Park. These lions had taken up residence in the Ngong Forest, adjacent to my farm off the Langata Road.

Many years ago I joined a body of conservationists and well wishers recommending Nairobi National Park be ring-fenced with an electric eight foot high game fence, such as the successful perimeter fence around Lake Nakuru National Park.

This suggestion was overturned by the lobby who advocated the southern boundary remain open for the migration of wildebeest and Zebra. However, times have changed, with the rapid expansion of residential and small-scale farming in Kitengela.

With the unfortunate death of Mowhawk the lion in Kitengela, surely the Kenya Wildlife Service must revisit the fencing option as a means of safeguarding our wonderful park and its high value wildlife from continued conflict with the surrounding population.

Yours sincerely,
Antony Church, Naivasha

EAWLS PARTICIPATES IN KENYA'S LARGEST IVORY BURNING EVENT



The East African Wild Life Society (EAWLS) participated in the burning of 105 tonnes of ivory at the Nairobi National Park on 30 April to demonstrate Kenya's determination to continue campaigning for a total ban on the trade in ivory and other products from endangered wildlife species. Also going up in flames was one tonne of rhinoceros horn. On the sidelines of the ivory burning event, EAWLS was one of exhibitors showcasing their efforts in conservation through the Society's various programmes, projects and merchandise.

EAWLS AND NAROK COUNTY GOVERNMENT PARTNER TO PROTECT MASAI MARA

The East African Wild Life Society (EAWLS) has entered into a partnership with the County Government of Narok to review the Masai Mara National Reserve (MMNR) Management Plan. This initiative is supported by the Planning for Resilience in East Africa through Policy, Adaptation, Research and Economic Development (PREPARED), a project funded by United States Agency for International Development (USAID) to conduct an assessment of tourist facilities in MMNR.

"The request by Narok County Government to have EAWLS to undertake this project is a sign of the trust that the Narok Government has bestowed on our organization," said Julius Kamau, EAWLS Executive Director, at a meeting with senior county officials.

Lena Munge, the Narok County Minister for Tourism and Wildlife said: "This partnership between the Narok County Government and EAWLS cements our desire and willingness to build a strategic partnership between these two institutions to promote sustainable natural resource management in Narok County."

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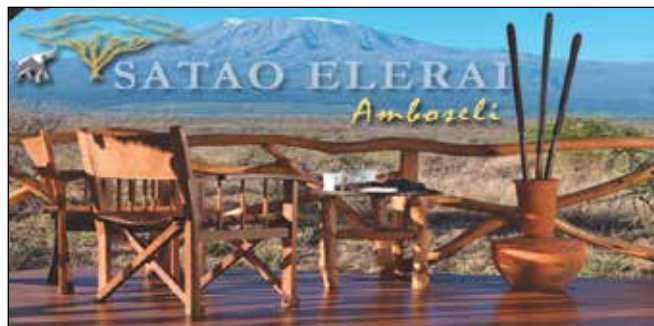


EAWLS HOSTS SWEDISH CONSERVATION GROUP

EAWLS hosted the Swedish Society for Nature Conservation (SSNC) on 24 May to discuss Agenda 2030 for Sustainable Development, a plan of action on ending poverty, combating inequality and injustice and tackling climate change. SSNC had co-organized a workshop on Agenda 2030 in Nairobi that brought together various partners from across Africa. EAWLS used the opportunity to present its perspective on Agenda 2030.

EAWLS PARTICIPATES IN TREE PLANTING

The Kenya Forests Working Group, a subcommittee of the East African Wildlife Society, took part in a tree-planting exercise to mark this year's International Day of Forests. Celebrated on 21 March, the International Day of Forests was established by a resolution of the United Nations General Assembly in 2012 to create awareness on the importance of forests to people's welfare.



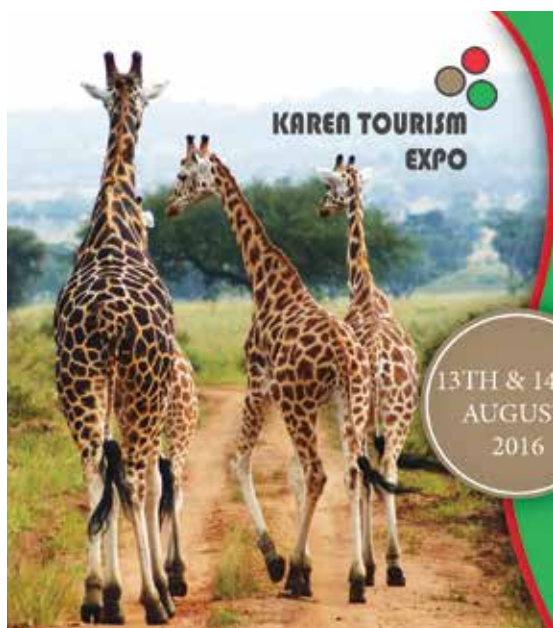
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FIRST BLACK RHINO BORN IN 25 YEARS

Conservationists in northern Kenya have celebrated the birth of a female black rhino in Sera Community Rhino Sanctuary, the first in the region in more than 25 years. The calf, born in mid-March, represents the community's hopes that the sanctuary can nurture a viable breeding population of black rhino that could eventually help repopulate other conservation areas. Northern Rangelands Trust's senior research and monitoring officer Antony Wandera said the rare birth demonstrates the strength of the growing community conservation movement.



PHOTO BY: WWW.ZSL.ORG

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SEVENTY HECTARES OF FOREST LOST ANNUALLY TO ILLEGAL LOGGING - UN

A recent United Nations-sponsored study shows that Kenya loses 70,000 hectares of forest each year to illegal loggers. The report by the UN Environment Programme (UNEP) and the International Police Organization (INTERPOL) blames the problem on loopholes in Kenya's law on forests. While individuals cut down numerous trees to make charcoal, the report's author, Christian Nellemann, says organized crime is the main culprit. According to INTERPOL, the Kenyan port of Mombasa is a major transit point for illegally harvested wood. The Kenya Forest Service (KFS), the government agency responsible for the conservation of the country's woodlands, disputed the findings of the report and stressed that it was effectively carrying out its mandate.

NEW FUNDRAISING RECORD SET AT 2016 RHINO CHARGE EVENT



PHOTO BY: WWW.NAIBOR.COM

KENYA SETS UP AIRPORT COURT TO TRY WILDLIFE AND DRUG TRAFFICKING CASES

Kenya has set up a court at the Jomo Kenyatta International Airport in Nairobi (JKIA) in a bid to speed up trials of suspects arrested for offences related to the trafficking of illegal wildlife products and narcotics. The court will be open 24 hours every day of the week. It will be manned by a magistrate and six other members of staff. Seventeen per cent of illegal ivory seized globally during the past seven years were confiscated at JKIA, according to a report by the International Air Transport Association (IATA).

A total of 139,402,565 Kenyan shillings (nearly \$1.4 million) was raised at this year's Rhino Charge, the annual off-road motorsport competition held in Kenya to raise funds for conservation projects. Some 108 million was realized last year. Prizes were awarded at a colourful ceremony held at the Charge venue in Naikara and Olderkesi group ranches, Narok County. The top three fundraisers were Stanley Kinyanjui of car number 62 (Magnate Chargers) who raised 14,500,000 shillings. Peter Kinyua of car number 23 brought in 11,215,000 shillings, while Alan McKittrick of car number 5 raised 10,315,243 shillings.

KENYA TO PUSH FOR TOTAL BAN ON TRADE IN IVORY

Kenya will lobby for a total ban on the global trade in ivory at the 17th Conference of Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which will be held in South Africa in September. President Uhuru Kenyatta said Kenya will maintain its strong position against ivory trade as demonstrated in the decision to burn 105 tonnes of ivory and 1.3 tonnes of rhino horn in April.

"We adopted a green economic strategy and economic plan," Mr. Kenyatta told delegates at the United Nations Environment Assembly in Nairobi on 26 April. "Our critical part is our stand against poaching."

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RARE WHITE GIRAFFE SPOTTED IN KENYAN CONSERVANCY

Another rare white giraffe was recently spotted at Kenya's Ishaqbini Hirola Conservancy in Garissa County. The Northern Rangeland Trust's (NRT) research and monitoring team spotted the completely white adult reticulated giraffe browsing with a regular herd during a field visit in the conservancy. Regional Coordinator for NRT-Coast, Yassin Mohammed, snapped a grainy picture of the giraffe with his cell phone, and that was the last they saw of it. The Ishaqbini giraffe is not an albino. The giraffe has a condition known as leucism which causes partial loss of pigmentation resulting in white, pale or patchy coloration of skin, hair, feathers, cuticles or scales but not eyes. Though uncommon, leucism occurs in many species, including penguins, eagles, and hippos.



PHOTO BY: WWW.LEQUIPE.FR

CELEBRITIES BACK UN CAMPAIGN TO END ILLEGAL TRADE IN WILDLIFE

The United Nations and celebrities from across the globe have launched a campaign against the illegal trade in wildlife. The WildforLife campaign, was launched in May at the second UN Environment Assembly (UNEA-2) in Nairobi. UNEP Goodwill Ambassadors are lending their weight to the cause. They include Brazilian model Gisele Bündchen, who is fighting for sea turtles; four-time African Footballer of the Year Yaya Touré (Manchester City, Ivory Coast), who is backing elephants; and actor Ian Somerhalder (Vampire Diaries, Lost), who is rooting for pangolins.

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AWF HAILS NEAR TOTAL BAN ON ELEPHANT IVORY IN UNITED STATES

The African Wildlife Foundation (AWF) has welcomed the revision of a United States government rule on the elephant that will make it more difficult to launder illicit ivory in the US and provide greater protection to Africa's elephants. The revision of the US Fish and Wildlife Service's 4(d) rule for the African elephant under the Endangered Species Act, completes a near-total elephant ivory ban in the United States. The revised rule will more tightly restrict ivory trade in the United States, essentially prohibiting most commerce in ivory, with very limited exceptions for certain pre-existing manufactured items such as musical instruments, furniture pieces and firearms that contain less than 200 grams of ivory and that meet other special criteria.

PHOTO BY: WWW.MARTINUAV.COM



UNMANNED AERIAL VEHICLES TO THE RESCUE OF ELEPHANTS

In a bid to counter the rampant poaching of the African elephant, Bathawk Recon, a Tanzanian-registered company that strives to stem the menace through the use of unmanned aerial vehicles (UAVs) has partnered with US-based Martin UAV in an initiative to protect the majestic pachyderm. The unmanned aerial vehicle operates with video and an infrared-camera system that feeds data back to the ground station from up to 30 kilometres in real time with minimal to no intrusion to the animals or environment. In addition, the technology offers effective wildlife mapping and census solutions that enable Bathawk Recon to not only track but also aggregate animal data that can be used by specialists to develop long-term solutions that deter poaching and human-animal conflict, while monitoring wildlife wellbeing in Africa.

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OPINION

CHINA, IVORY AND WISHFUL THINKING...



KARL AMMANN is a wildlife photographer and film-maker. He has received world-wide recognition, notably as one of Time Magazine's Heroes of the Environment in 2007.

In early December 2015, a Save the Elephants' press release documenting the decline in price of illegal raw ivory in China was picked up by a wide range of media outlets. A range of other non-governmental organizations (NGOs) then claimed credit for a demand reduction which they believed had taken place.

At the time I informed Save the Elephants and researchers Lucy Vigne and Esmond Martin that the sampling of legal and semi-legal

outlets in northern China might not have been representative of that which was going on in a regional context.

They confirmed that their survey and press release had been based solely on their findings in parts of China from ivory carvers and traders. They agreed that their findings were not representative of what has been happening in the wider region of South East Asia.

During various film shoots, over the past six years, we documented more and more ivory and ivory products becoming available in a wide range of neighbouring countries and gambling enclaves (specifically created to get around the national laws of China, including those relating to gambling, prostitution, the illegal trade in

A carver in Vietnam shows us a marked tusk which looks very much like one having come out of government storage.



TOP: The younger generation appears to be equally interested in ivory jewelry items.

BELOW: A lot of the marketing of high profile products is now done showing potential clients the product as part of a mobile phone display.

wildlife and drugs). We made it a point to also film activities at various border crossings where we documented a total lack of control measures which would help restrict the cross-border trade of contraband such as wildlife products. While countries in parts of Africa have graduated to introducing sniffer dogs, there was no sign of any such control measures at the borders we checked out. The trend of more and more Chinese travelling to neighbouring countries for pleasure as well as for shopping is evident everywhere as is the increasing number of Chinese-owned shops in a range of retail markets and more and more hotels under construction in some of the border enclaves.

It has never been easy to watch and film Chinese customers abroad checking out and buying ivory, rhino horn products, tiger bone jewellery and wine, bear bile and the like. We managed to film dozens, if not hundreds, of these sales transactions, in stark contrast to the contention in the press release that the authors



PHOTOS BY: KARL AMMANN

IN ONE LOCATION WE FOUND A RANGE OF SHOPS WITH POSTERS ADVERTISING ELEPHANT IVORY, BUT THEY HAD TAPED OVER THE ENGLISH VERSION OF 'IVORY FOR SALE' WHILE STILL DISPLAYING THE CORRESPONDING CHINESE CHARACTERS.

had not seen a single person in a shop in China actively buying ivory products.

Chinese customers would often take photographs on their mobile phones, send the images with the prices back to friends in China, receive feedback in minutes and then expand their purchases accordingly. Although the price for raw rhino horn has dropped per kilo (but not for the corresponding jewellery which tends to be sold on a per gram basis), the rates quoted



TOP: The more elaborate landscape carvings are becoming rare in some markets the more downmarket jewelry items are the main line of production in most workshops.

BELOW: Mammoth ivory shop outlets appear to be on the increase and offering a perfect setting to launder elephant ivory products.

for ivory have been pretty consistent in the neighbouring countries at \$800 to \$1,200 per kilo with every dealer mentioning quality as a final determining factor.

As to the thousands of worked items we filmed, negotiations were generally not just in terms of weight but based on the type and quality of the product on offer.

We recently concluded another three-week film shoot documenting the demand for tiger products, but since this trade is closely interlinked with ivory, pangolin scales, hornbill ivory, rhino horn and so on, we also asked our local investigators to check on changing prices and demand patterns.

There was no talk of the bottom dropping out of any market in some of China's neighbouring countries, in fact the opposite, with more and more ivory on display in a

range of trading centres in Laos, Myanmar and Vietnam.

One could not avoid the impression that there might be a specific policy in place encouraging key Chinese ivory traders to set up shop in neighbouring countries - the first step in counteracting compensation claims that have been discussed in the context of China finally outlawing the domestic ivory trade.

One shopkeeper in Laos told us that most of the ivory now on display in that country was carved in Laos by Chinese carvers. When leaving China we flew out through Guangzhou International Airport.

We again filmed a large supply of 'mammoth ivory' items in a souvenir shop located in the departure hall after customs and immigration. As with a range of other mammoth ivory outlets we looked into, the quantities and variety of items appeared to be on the increase.

Clearly, the average consumer would be unable to determine, on the spot, if they are buying elephant or mammoth ivory. This new trend offers a perfect scenario for laundering African elephant ivory.

In one location we found a range of shops with posters advertising elephant ivory, but they had taped over the English version of 'ivory for sale' while still displaying the corresponding Chinese characters.

There is a very wide range of fake and falsified wildlife products on offer imitating rhino horn, ivory (some plastic and some bone), tiger wine, tiger teeth, tiger claws, tiger penis or bear bile



PHOTOS BY: KARL AMMANN

ONCE AGAIN THE CONCLUSION AT THE END OF THE TRIP WAS: THE DEMAND IS THERE, THE MARKET AND THE KEY DEALERS ARE VERY DYNAMIC AND ARE READY TO ADAPT AND TAKE LOSSES IF NECESSARY.

A typical display in a Laos souvenir shop many of which have been acquired by Chinese traders.

(mostly from pigs) and all at a fraction of the price of the real thing.

The Chinese traders and markets once again demonstrating how very good they are at beating the system and generally being miles ahead of any kind of enforcement bodies trying to protect the end consumer - or for that for matter the wildlife.

We have been left with the overall impression of a culture of window-dressing, corruption and lip service - from the street dealers, to the manufacturers, to the wholesalers, to the policy makers with the corresponding infrastructure having been allowed to develop to serve this dark underbelly of China.

It is an ever changing scenario with one constant - overall demand seems on the increase and not in decline.

In another case, a news item by Al Jazeera TV, based on an investigative story by an NGO, resulted in some cosmetic measures.

We have a mobile telephone photograph of a display handed to us by a dealer offering 33 different rhino horns of various weights and size. This type of marketing is used by wholesale importers sending the latest offers of new arrivals to a wide range of retailers. It would appear that a host of such networks exist.

On our last trip, we travelled with a former Russian government official who stated that Russia had helped establish the communist systems in many of these countries, and under any communist system the authorities would have the enforcement capacity to counteract these trends if there was any kind of real political will.

Once again the conclusion at the end of the trip is the demand is there, the market and the key dealers are very dynamic and are ready to adapt and take losses if necessary. Governance quality in the countries concerned is generally poor and encourages corrupt practices.

Based on these experiences, those NGOs peddling feel-good demand reduction tales might well turn out to be part of the problem. ●

LEST WE FORGET: MASSACRE OF ELEPHANTS





JONATHAN AND ANGELA SCOTT are multi-award-winning wildlife photographers and longtime residents of Kenya. They are the only couple to have won, individually, the Wildlife Photographer of the Year Award. They write, illustrate, teach and are TV presenters, most famously known for the 'Big Cat Diary' series for BBC television.

People have always been smitten by the beauty of elephant ivory as I discovered for myself while traveling overland from London to Johannesburg in 1974.

I am not exactly sure where I bought the small ivory carving that would haunt me in years to come. I think it was Kisangani (formerly Stanleyville), 2,000 km upstream from the mouth of the mighty Congo River, home during the 1880s to Mohammed bin Alfani Murjebi, alias Tipu Tip, the infamous Zanzibari who traded ivory and slaves.

I remember a man with a basket unwrapping packets of green banana leaves each containing ivory and choosing one particularly beautiful piece with a woman's head carved on it. The sheen and texture of ivory makes it exquisite to the human eye and to the touch. I was spellbound by that carving; it seemed to speak of Africa. Seduced by its beauty I never gave a thought as to where the ivory might have come from. What I can be sure of now is that an elephant died an unnatural death to make that carving possible.

There was no stigma to buying ivory in those days. In the 1970s there were more than a million elephants in Africa and the streets of Nairobi were full of curio shops selling everything from ivory bangles to the most exquisite and elaborate carvings. Elephant hair bracelets were everywhere, as popular then as the copper and brass Samburu bracelets are today. But during the 1980s the demand for ivory escalated to new levels with 60,000 elephants slaughtered annually across the continent reducing the population from around 1.3 million in 1979 to 600,000 by then Kenya's President Daniel arap Moi [on the advice of Richard Leakey, then head of the Kenya Wildlife Service (KWS)] burned a stockpile of 12 tons of ivory on 19 July 1989.

Kenya's elephant population had plummeted from 160,000 in the 1960s to less than 20,000 by then. I was there that sunny afternoon in Nairobi National Park to photograph an event that helped secure a ban on the sale of ivory later that same year.

As I watched I was reminded of the ivory carving that I had left in South Africa in 1975 at the end of my journey overland along with a carved wooden head of a Masai warrior purchased in a street market in Dar es Salaam, Tanzania's commercial capital. At the time they were my most treasured keepsakes from my trip. I never returned to retrieve my guilty secret. Fast forward 25 years to 2015 by which time a tipping point had been reached with more elephants being killed than born.

IN THE 1970S THERE WERE MORE THAN A MILLION ELEPHANTS IN AFRICA AND THE STREETS OF NAIROBI WERE FULL OF CURIO SHOPS SELLING EVERYTHING FROM IVORY BANGLES TO THE MOST EXQUISITE AND ELABORATE CARVINGS.



65,000

Number of elephants killed in Tanzania between 2008 and 2012, with the epicentre of the carnage the vast Selous Game Reserve in the south of the country, an area the size of Switzerland.

The 12 mountains (10 foot pyres) of ivory represented a black market value of at least US\$ 100 million.

The death toll from poaching had risen to 30,000 each year across Africa with Tanzania alone admitting to the loss of a staggering 65,000 elephants between 2008 and 2012, with the epicentre of the carnage the vast Selous Game Reserve in the south of the country, an area the size of Switzerland.

A year earlier, during a press conference organised by WildlifeDirect (the conservation NGO that he founded), Leakey described the poaching of elephants and rhinos in Kenya as a “national disaster”. Leakey is without question one of the most courageous people I have ever met, prepared to speak up while others remain silent, to put his life on the line for the sake of his principles.

He lamented that known ringleaders were operating with “outrageous impunity”, and that

we have to stand up and say that it cannot go on.” Kenya had been identified as the main transit point for ivory poached in Africa and destined for the Far East. Poachers had little to fear from the tough new laws designed to stem the haemorrhage with rangers ‘risking their lives’ in a war that they could not win.

With massive corruption still the order of the day, the poachers and their paymasters were able to act with impunity, something that would be impossible if they did not “have some form of protection from law enforcement agencies,” Leakey maintained. “It is a problem of a few



criminals, the ringleaders are known,” he added, claiming that a core group of around 20 to 30 people were organising the mass poaching but that none had faced justice.

“We cannot afford to lose what is left,” he said “The only way to stop it is to appeal to President Uhuru Kenyatta to be bold, to take action.” Kenyatta responded by asking Leakey to become Chairman of the Board of KWS, an organisation he founded in 1989, before resigning as the director in January 1994.

People challenged Leakey to name names, but just as the quest to bring order and justice to the administration of the Masai Mara requires deep pockets and the best lawyers in the land to defend accusations in a court of law, proving the truth is not so easy. Now in his early 70s, Leakey commented at the time of his appointment as

Chairman of KWS that he did not ask for the job, did not want the job, but would embrace it nonetheless. The initial search for a Director General for KWS foundered. Then in early 2016 it was announced that Kitili Mbathi, a career banker, had landed the job.

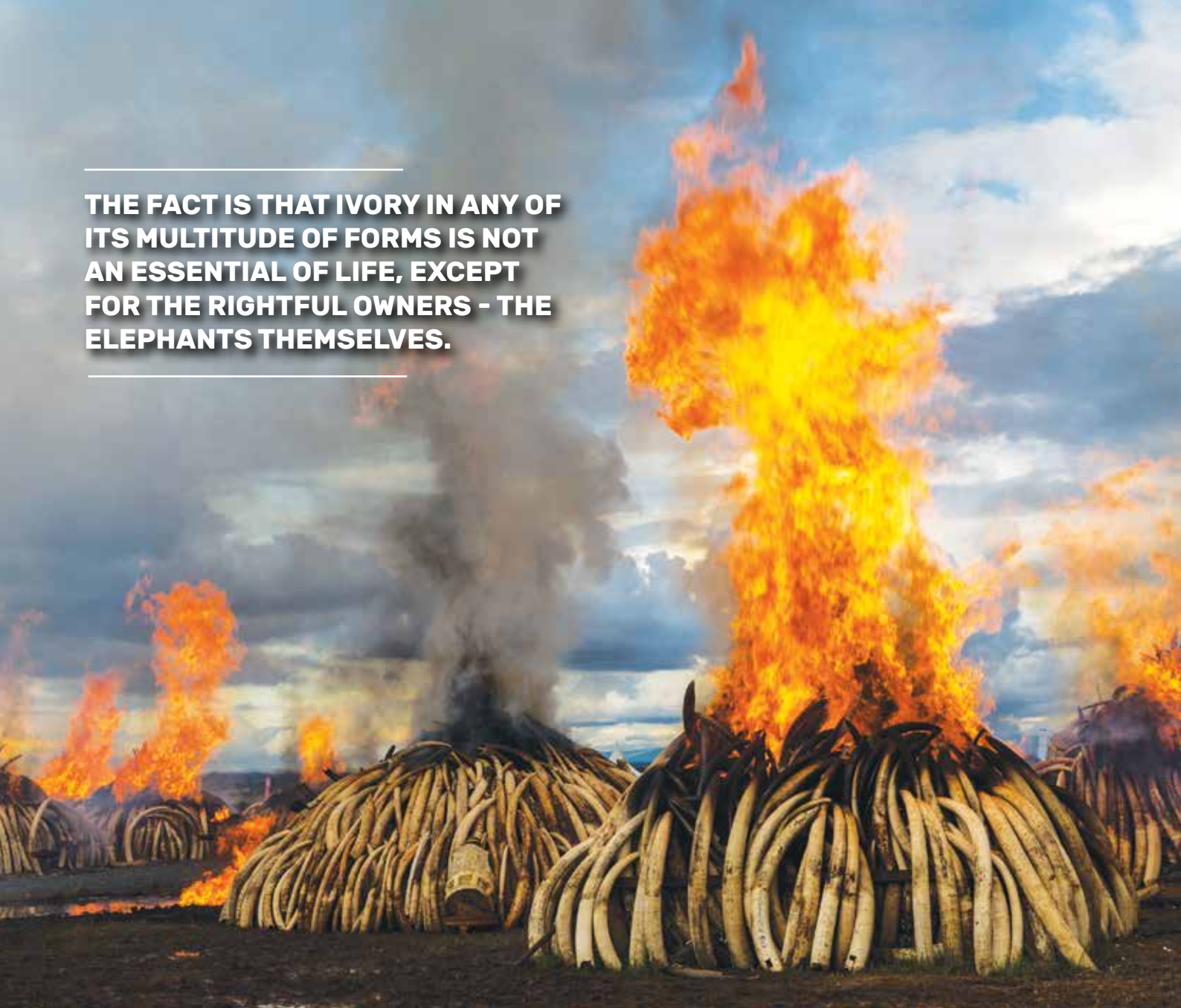
I first met Mbathi 30 years ago, and was immediately impressed by his tall and distinguished bearing, a man with an air of authority along with an easy smile. The role of director of KWS is not for the fainthearted, but Mbathi looks comfortable in his new role, and his personable yet powerful demeanour has already won him many friends.

The manner in which he and his team at KWS oversaw the preparations for the ivory burning was hugely impressive. The rangers and wardens looked incredibly smart and professional, helpful

TOP: More than 1000 rangers have been killed worldwide with many more injured over the past 10 years. In Africa 27 rangers have been killed in the past 12 months.

BELOW: Some of the Ivory and ivory sculptures that were set ablaze.

THE FACT IS THAT IVORY IN ANY OF ITS MULTITUDE OF FORMS IS NOT AN ESSENTIAL OF LIFE, EXCEPT FOR THE RIGHTFUL OWNERS - THE ELEPHANTS THEMSELVES.



1.35 tonnes of rhino horn valued at \$ 67 million was torched.

and polite to those in need of assistance as they kept a watchful eye on proceedings.

WHY BURN VALUABLE IVORY?

So what of the choice to torch all that ivory, valued at hundreds of millions of dollars (ivory trades in the Far East at \$2,000 per kg), sums of money that most of us cannot even comprehend. Some people were not convinced.

“How could you burn all that money?” was a common refrain on the street, and as I stopped to pay my parking ticket at a supermarket in Nairobi the day before the ivory went up in smoke, I enquired of the young man serving me.

“How’s life?” With a wistful smile of resignation he replied, “difficult.” Under other circumstances I might have stopped to enquire further: had some disaster befallen the man, had he lost his wife or a child perhaps? Yet I knew instinctively

what ‘difficult’ meant here in Kenya. A large percentage of the population struggles each day to meet the basic requirements of life: a job, somewhere to rest their head at the beginning or end of the day, schooling for their children, clean water, sanitation, health care.

With those criteria as the benchmark I knew exactly why life was tough for the majority of Kenyans - even for the employed - and why burning ivory might not resonate with their aspirations. For many conservation priorities are seen as a luxury not a necessity. The fact is that ivory in any of its multitude of forms is not an essential of life, except for the rightful owners - the elephants themselves. Ivory is a luxury. It is a commodity, albeit one that has fascinated and beguiled human beings for centuries.

Ivory has never been thought of as having medicinal value like rhino horn, however



This is the fourth ivory burning in Kenya since Dr. Richard Leakey and President Moi set fire to 12 tonnes of ivory in July 1989.



misplaced that belief that might be. No, ivory is something to be coveted and worshiped even, with Buddhism and the Roman Catholic church both playing a significant role in fuelling the ivory trade.

Ivory statues of Buddha or the Virgin Mary are seen as sacred possessions, offering the chance for the converted to own a little piece of the spiritual world carved from an elephant tusk, despite the pleas of the Dalai Lama and Pope Francis to respect the natural world. Old habits die hard.

The whole world - not just Kenya - will be watching to see if we live up to the pledges made on the 30 April 2016, that we will prosecute the criminals and protect our wildlife. Within minutes of President Kenyatta igniting the mountains of ivory the sky filled with billowing plumes of smoke and orange tongues of fire.

The storm filled sky rendered this as an apocalyptic scene, a vision from hell, a reminder of the unspeakable, of the holocaust. It was both a chilling epitaph to the death of those 8,000 elephants and the demise of our society.

MEANING BEYOND THE HYPE

I wanted to be alone, away from the press of humans, to gather my thoughts and allow the razzmatazz to evaporate from my soul. There was no doubt this was an epic scene, a photographers dream, but surely it had to have meaning beyond all the hype.

The arguments for and against burning ivory will continue. But one thing is clear, hoarding ivory for "one-off" sales does not work. Better to light a candle than to curse the darkness they say,

but make no mistake, our elephants and lions - ancient icons of wild Africa - are disappearing from the face of the earth at an ever execrating pace due to greed and corruption.

Perhaps 450,000 elephants and just 20,000 lions are all that is left. We can blame China and the other consumer countries in the Far East that drive the trade in ivory, but we must be held to account too.

The poachers are our poachers, aided and abetted by our middlemen and our criminal kingpins. We have tough new laws and penalties in place, but will our courts deliver? Unless we are willing to take steps to challenge the status quo at home then we have only ourselves to blame for the loss of our wildlife.

In the meantime we should honour those people who are willing to step up, to put themselves in the public eye and embrace the example offered by Leakey and Mbathi to serve a cause bigger than themselves.

Among the next generation of Kenyans to do just that are Paula Kahumbu, CEO of WildlifeDirect and someone who is always willing to speak her truth; people like Smriti Vidyarthi, anchor of NTV Wild, a pioneering initiative to bring wildlife in to the homes of ordinary Kenyans, someone willing to demand answers of our leaders; Lena Munge, Chief Secretary of Tourism for Narok County who has pledged her support for initiatives to bring a sense of order to the management of the Masai Mara, the face of Kenya's tourism industry that has been so terribly neglected for far too long.

Nobody can say they do not have a voice. We all do. ●

MAMA SIMBA

GIVING WOMEN A VOICE IN CONSERVATION



HEATHER GURD is the Conservation Manager for Ewaso Lions. She works with the team in designing,

evaluating, and disseminating Ewaso Lions conservation programmes in Samburu.



SHIVANI BHALLA is the Executive Director of Ewaso Lions. She founded Ewaso Lions in 2007 and the project

has now grown to a team of 37. Shivani is a National Geographic Emerging Explorer and has won awards from the Whitley Fund for Nature and the Born Free Foundation.

The African lion is a powerful flagship species synonymous with the continent's rangelands, but the number of lions and other large carnivores is declining rapidly.

Kenya is no exception to this grave trend. The national lion population is estimated to be fewer than 2,000 individuals. Here, like elsewhere in Africa, habitat loss and conflict with humans rank amongst the most significant threats to lions.

Rapid human population growth and encroachment into wildlife habitat has increased the frequency of human-lion interaction and conflict over recent decades. Conflicts may culminate in retaliatory persecution of lions and are often most pronounced amongst pastoralist communities for whom livestock depredation presents a

significant actual, as well as perceived, risk to people's livelihoods.

In northern Kenya, the Ewaso Lions conservation organisation is working with the local Samburu community, a semi-nomadic pastoralist ethnic group, to develop creative solutions to conserve lions and mitigate human-carnivore conflict.

Ewaso Lion's flagship programme, Warrior Watch, was launched in early 2010 to engage the formerly neglected "moran" (or warrior) demographic in conservation. Within two years, Warrior Watch had already significantly improved local attitudes and tolerance towards wildlife.

Currently, the programme spans four community conservancies in northern Kenya; our network of warriors working tirelessly to promote lion conservation within their respective locations. In light of this success, Ewaso Lions developed new programmes targeting other

The Mama Simba programme expanded in 2016 and now includes a core group of nineteen women from four villages in Westgate Conservancy.





PHOTOS BY: EWASO LIONS

it upon themselves to change this; to ensure Samburu women were given a voice in conservation.

The women repeatedly walked into Ewaso Lions Camp, requesting to be a part of our conservation efforts and eager to receive education and training. “We can do just as good a job as the warriors,” they said, “if only we were given the opportunity.”

In September 2013 the Mama Simba programme or, as the ladies fondly refer to it, *Nkiramat Ngwezi* (‘women involved in conservation’) was born.

Mama Simba equips women, who have limited exposure to conservation issues, with the knowledge and skills needed to reduce their environmental impact and effectively conserve and coexist with wildlife.

The programme began working closely with a core group of ten women from Sasaab village. The women, had seen warriors in their community progress from complete

illiteracy to recording vital data on wildlife sightings and conflict incidents within three years. They expressed their own desire to read and write.

A pre-school teacher was hired and a Saturday school for the women was established. Now, the ladies are able to read and write basic English and Kiswahili. Mparasaroi, one of the leaders of the programme, proudly describes how, for the first time in her life, she is now able to read what her children are learning in school and understand what grades they receive.

She is grateful that this now gives her the opportunity to assist and encourage her children with their own education. Acquiring literacy not only facilitates the ladies’ participation in conservation-based activities, but also empowers them in other aspects of their life, including their beadwork, food and livestock trade businesses.

As part of the Mama Simba programme, the women are also involved in conservation training workshops where they learn about the importance of conservation and are provided with hands-on training in wildlife identification and conflict-mitigation.

Whilst keen to embrace any opportunity to learn about conservation, it quickly became apparent that these women had only ever experienced negative interactions with wildlife. Despite living alongside world famous national

Mama Simba women attend a conservation workshops to learn about the importance of wildlife and receive hands-on training in wildlife identification and conflict-mitigation.

demographic groups within the community. Until recently, however, one group - the Samburu women - remained notably absent.

Gender roles within Samburu society are strongly marked, with women typically assuming responsibility for the household and not participating in decision-making at the community level.

However, by virtue of their role fetching firewood and water, maintaining the homestead and tending to livestock, they are central users and managers of natural resources and also frequently come into contact with wildlife.

Moreover, whilst elders and warriors are away with cattle during the dry season, women often remain within the village. Consequently, they must deal with human-carnivore conflict first-hand should a predator attack livestock inside their village at night.

Yet, they are rarely given a chance to voice their opinions. In 2013, a small but very vocal group of ladies from Sasaab, a village located a few kilometres from the Ewaso Lions Camp, took

IN SEPTEMBER 2013 THE MAMA SIMBA PROGRAMME OR, AS THE LADIES FONDLY REFER TO IT, NKIRAMAT NGWEZI (‘WOMEN INVOLVED IN CONSERVATION’) WAS BORN.

CONSERVATION

TOP: Samburu women are renowned for their exceptional beadwork skills. As part of the Mama Simba programme, Ewaso Lions commissions the ladies to make authentic beaded lion figurines.

BELOW: Women from Westgate Conservancy on their first-ever wildlife safari. They were incredibly lucky to witness the birth of a baby elephant!

reserves, Samburu women rarely ever get to observe wildlife close up. Instead, they might just see the tracks of a carnivore outside their homestead or whilst grazing their livestock. So, in January 2014, a group of 32 women was taken on their first wildlife safari in Samburu National Reserve. This was the first time that most of the women encountered wildlife in a positive way. They were exhilarated!

They departed their villages before sunrise singing excitedly about their hopes to see wildlife, especially lions. By 11 a.m. the group had been lucky enough to see a plethora of herbivores, including many antelope species, large herds of elephants and even some of Samburu's 'special five', such as the endangered Grevy's zebra.

Yet, there was still no sign of lions. The anticipation was growing, as the women were desperate to see these animals about which they had learnt so much. The group divided, with the four vehicles dispersing to search high and low for the resident pride.

Finally, at noon, we spotted two of Samburu's famous lionesses; Nanai and Nabulu feeding on a baboon. For many of the ladies this was their first ever time to see lions and they were thrilled - watching excitedly through their binoculars.

After a while, one of the vehicles departed the scene and was soon radioing the other groups telling them to rush to the hill where they were witnessing something amazing; the birth of an elephant!



PHOTOS BY: EWASO LIONS

Everyone was astounded that this female had allowed us into her life to watch this miracle at close range. As the women were watching the birth unfold before them, they started to talk to the elephant in their own language, explaining how sorry they were that elephants were in trouble and that they now understood the importance of conservation. They would do everything in their power to help them and other animals.

The ladies also apologised to the elephant because, in Samburu folklore, there is a myth that women had fought with elephants, an act that had





PHOTOS BY: EWASO LIONS

TOP: Through Mama Simba, Ewaso Lions has organised clean up campaigns; taking waste which is a common sight around rural villages to be recycled.

BELOW: To mark World Lion Day 2015, the Mama Simba ladies joined the rest of the Ewaso Lions team in a special "Running for Lions" event.

strained the relationship between the two species. It was a once in a life-time safari and a great way to start the Mama Simba programme.

As many of the women are widows, with families to support and limited opportunities outside of their small livestock businesses, a beadwork enterprise has been established to provide them with a supplementary source of income. Ewaso Lions commissions the Samburu women, renowned for their exceptional beadwork skills, to make authentic beaded lion figurines.

The programme buys the handicrafts directly from the women and sells them. Although a relatively small amount, the extra income can make a big difference to the women, especially during the dry season when it is hard to sell goats in order to obtain the money needed to buy food. A day after purchasing a number of beaded lions,

we often see the ladies waiting for a lift into town to buy goods such as sugar, tea and maize.

The goods the women buy from local shops, however, will often come packaged in plastic or thin nylon bags. These bags are typically either burned or discarded in the bush or around the villages. In the past, the ladies also admitted that they would wait for the dry river beds to flow before rushing down to the river to let the water carry their waste away downstream. That creates a huge problem as livestock and wildlife can ingest the waste plastic that litters the landscape.

Through Mama Simba, Ewaso Lions has organised clean up campaigns in the local villages with 220 women. In one week, the women collected 2,221 plastic containers and 15,922 pieces of plastic litter, which were sent away for recycling. Long-term solutions for waste management are being explored and one of them could be establishing a recycling enterprise run by the Mama Simba ladies.

Since launching the Mama Simba programme in 2013, the core group of 10 ladies has worked closely with other women from their communities - spreading a conservation message to their peers. They also now constantly report sightings of lions and even conflict incidents, increasing the programme's network of informants.

Munteli, one of the programme leaders, is a fantastic example; three years ago, she could not even write down her name. Now she regularly sends us text messages about lions. In August 2015, the ladies even participated in the "Running for Lions" event to mark the World Lion Day. Each member of Ewaso Lions team ran for their favourite lion.

The women have developed a strong sense of ownership and pride in the work they do. They love the programme so much that they even demanded uniform. They now can be seen parading round their villages in their red and white coloured cloths called shukas which are emblazoned with the words 'Mama Simba' for the whole community to see.

In fact, Munteli and Mparasaroi have recently taken on new roles as Mama Simba coordinators in which they will be responsible for training a new cohort of Mama Simba ladies from three additional villages within Westgate Conservancy.

The nine new women, who joined the programme in February 2016 following a three-day conservation workshop, take the current number of Mama Simba ladies to 19. "Through the efforts of these women, and the support of the wider community, we have hope for the future of lions in northern Kenya." ●



PHOTO BY: SPENCER SEKYER

TRADE IN GREAT APES



DAN STILES has worked in academia, for the United Nations as staff and consultant and for various NGOs such as IUCN, TRAFFIC, Save the Elephants and many more. He has lived in Kenya almost

continuously since 1977 and currently manages the Project to End Great Ape Slavery.

They named him Manno and he is four years old, though he is small for his age. Manno has bright, inquisitive eyes, has a fondness for pumpkin seeds and loves to scamper about. He has been living alone as the solitary chimpanzee in a small, private zoo in Duhok, Kurdistan, in northern Iraq for about three years.

Manno turned up in 2013 with wildlife dealers in Damascus, Syria, as a traumatized baby

orphan. His mother was no doubt killed for bushmeat somewhere in Central Africa and the poachers sold him off to traffickers.

The owner of the Duhok Zoo paid \$15,000 for Manno and the little chimpanzee has repaid the investment by becoming a very popular attraction. People come from all over the Duhok area to play and have their photographs taken with Manno. The little chimpanzee is dressed up in children's clothes and visitors shower him with food and drink that kids like – junk food. This probably explains why Manno is small for his age.

TOP: Manno eating pumpkin seeds bought for him by adoring zoo visitors.

IN FACT, THE FUTURE IS NOT BRIGHT FOR ANY GREAT APE THAT IS TRAFFICKED. THEY EITHER END UP IN BLEAK CAGES OR ARE SLAIN.



PHOTO BY: DANIEL STILES



PHOTOS BY: INSTAGRAM

TOP: Great apes bought as pets in the Middle East are usually dressed up and taught to smoke to amuse their owners.

TOP RIGHT: This baby orangutan is starting out life as a safari park photo-prop in Guangzhou, China. His future is not bright.

BELOW RIGHT: This baby chimpanzee smuggled from West Africa to the UAE via Oman in February is offered for sale for 120,000 dirhams (US\$32,700).

If Manno stays in the zoo, the day will come when he stops being cuddly and playful. He will grow in strength and in aggressiveness, as is normal with chimpanzees. If he is not caged up permanently first, he will attack and no doubt seriously injure someone. His future is not bright.

In fact, the future is not bright for any great ape that is trafficked. They either end up in bleak cages or are slain.

There are two main uses to which young apes are put: as pets or as attractions in commercial wildlife facilities such as zoos, circuses, shows, TV programmes, hotels and use as photo-props. The suffering is immense.

I have been investigating great ape trafficking for the past three years, since being invited to be a co-author of the United Nations report *Stolen Apes*, released in March 2013 at the 16th Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Conference of the Parties in Bangkok.

The report documents an alarming situation in which more than 1,800 cases were registered of trafficked chimpanzees, bonobos, gorillas and

orangutans from the forests of Africa and Asia between 2005 and early 2012. That is only a fraction of the real number, as documented cases are those involving seizures by the authorities, and the vast majority of incidents go undetected.

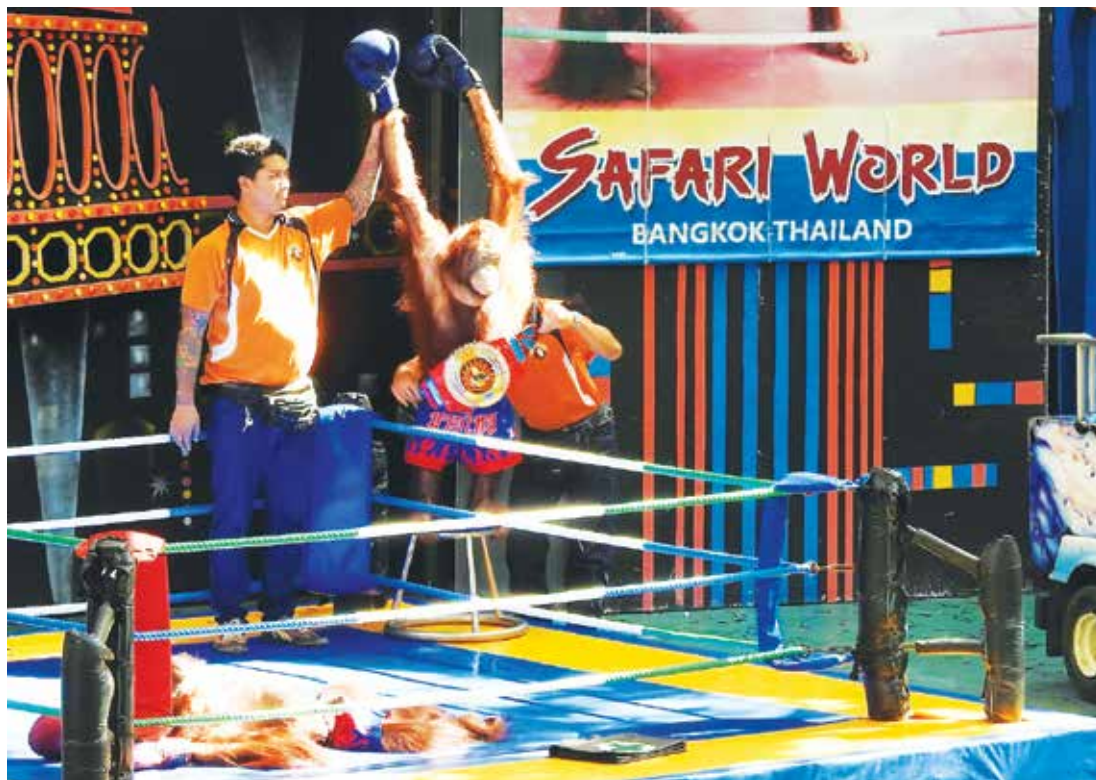
More tragically, for every live ape that enters the trade, at least one - the mother - and more than ten can be killed as collateral damage. The number lost is multiplied again because many infants die before reaching the final destination.

I have travelled to West and Central Africa, the Middle East and to Thailand, Vietnam and China, gathering information on this trade in apes for the Project to End Great Ape Slavery, sponsored by OI Pejeta Conservancy, which hosts the Sweetwaters Chimpanzee Sanctuary. I have also been discovering and monitoring a growing network of online wildlife traffickers, who post photos of their prized wildlife purchases and those they offer for sale on social media sites.

The usual routine is to move from Instagram or Facebook to WhatsApp or Snapchat to conduct the negotiations after the initial contact is made on a photo post. Prices are highest in the United

TOP: Although illegal by Thai law, this safari park on the outskirts of Bangkok continues to offer orangutan boxing matches. It is a good example of inappropriate captivity.

BELOW: When cute, cuddly great apes grow into adults, they are caged to live out a very bleak existence.



PHOTOS BY: DANIEL STILES

Arab Emirates, where a chimpanzee infant can go for more than \$30,000. They obtain the apes from well-established dealers based in Kinshasa, Conakry and Abidjan, who have agents in several other countries.

The typical road a ape takes in a commercial zoo or safari park starts with being used as a photo prop. When they get older they are usually trained to perform in some kind of entertainment show and after they reach puberty they are caged up to become a zoo attraction and to breed. Increasingly, dealers and zoos are breeding their own animals.

Traffickers in Egypt were amongst the first to see the financial advantages in breeding great apes. A woman with dual Egyptian and Nigerian nationality had been trafficking chimpanzees and gorillas out of Guinea and Nigeria since at least the early 1990s, assisted by an Egyptian veterinarian and family members. Two of her clients ran tourist hotels in Sharm el Sheikh that used young chimpanzees as photo props for tourists to hold.

Both hotel owners have since the early 2000s

established wildlife breeding facilities for great apes and other animals, and one has opened a safari park near Sharm el Sheikh. Chimpanzees and even gorillas are now being smuggled from these breeding centers to other countries in the Middle East and elsewhere. They sometimes go to Damascus first to pick up a CITES re-export permit, which corrupt officials issue for a price, so that they can arrive in the destination country with documentation that makes it look like a legal trade.

A baby chimpanzee from one of the Egyptian breeding facilities was seized in the Cairo airport last year during the security check, being smuggled to Kuwait, where infant great apes are in high demand. The poor thing now languishes in the Giza Zoo.

The Sweetwaters Chimpanzee Sanctuary in Kenya offered to rescue the little chimpanzee and provide him with lifelong care, but the Egyptian CITES authorities thus far have not responded to the offer. Little Doodoo, as he is called, could join five other chimpanzees at Sweetwaters that were seized in Kenya in 2005 after being refused entry into Egypt, trafficked by the Egyptian-Nigerian woman.

The number of great apes trafficked internationally every year is not large compared to some other species, but when the collateral damage is factored in, we are talking about





(PHOTO BY: GRASP, D. STILES)

All hominid mothers are very protective of their offspring.

Genetic makeup similarity in percentage between apes and humans

97%
Orangutans

98%
Gorillas

99%
Chimpanzees & Bonobos

up to 3,000 lives lost from the wild each year. One extremely important point is overlooked when simply numbers are used to assess the significance of this extractive industry. Great apes are not just any species group. We humans share millions of years of evolutionary history with them and our genetic makeup is surprisingly similar - about 97 per cent with orangutans, 98 per cent with gorillas and almost 99 per cent with chimpanzees and bonobos. We all belong to the same biological family called Hominidae.

I think there should exist a principle of “hominid rights”. All hominids share certain inalienable rights to bodily freedom, within practical and legal limits.

Increasingly, as more behavioural and genetic research is conducted, we are accepting more easily the fact that great apes are very much like humans in so many ways. Beginning in the 1960s the research of the ‘Trimates’ - Jane Goodall, Dian Fossey and Biruté Galdikas - made known to the world the surprising fact that characteristics previously thought of as exclusively human are shared by these intelligent, emotionally sensitive great apes.

Great ape mothers are incredibly protective of their young offspring, which is why they are always killed when poachers go out hunting for infants.

Currently, CITES treats great apes like any other animal or plant species. Although classified in Appendix I, which means that commercial

trade is prohibited, great apes can be traded for “non-commercial” purposes if they satisfy certain source criteria, such as being born in captivity.

Creating exceptions to the prohibition on international trade in great apes tacitly accepts that it is appropriate for humans to own and imprison them. Once in captivity, it is very difficult to monitor whether they are being used for commercial purposes or abused by unacceptable standards of confinement.

The bottom line should be, no inappropriate captivity of great apes. Inappropriate can be defined as: living alone without the company of other con-specifics, confinement in cages (except sleeping quarters associated with open environments), use in commercial activities (e.g. being sold as pets, used as photo props, trained to perform, used in commercial advertisements, dressed up in clothing to attract visitors).

Already, hundreds of great apes are being freed in Europe and the United States from biomedical research laboratories, and very soon chimpanzees from private commercial zoos in the US will be liberated, due to changes in laws and understanding of the uniqueness of great apes. This is already creating a huge problem of where to put them, once liberated. If all commercial wildlife facilities stretching from the Middle East to the Far East are included, it quickly becomes apparent that all great apes cannot be immediately emancipated after changes in law might come into effect.

So what is the answer? Change should be planned, gradual and move in stepped phases. The first step is stopping the illegal trade, which adds every year to the number that eventually will have to be freed. CITES could be instrumental in achieving this, but it is not implementing what needs to be done, mainly because the members are obsessed with elephants, rhinos and big Cats. Great apes are forgotten. Other organizations concerned with great apes also are not doing all that they could be doing.

Can Manno, Doodoo and others like him be saved? Only if people and officials start to take the great ape trade seriously. ●

Editor's Note: The UAE's Federal National Council has since passed a legislation that seeks to outlaw ownership of wild and other domesticated but dangerous animals by individuals. The law forbids the keeping of such animals as lions, tigers, apes and monkeys, and certain dog breeds.

WHAT IS THE COST OF CONSERVATION?



FELIX PATTON is a rhino ecologist, who writes about the species

from Africa and Europe. He has an MSc in Conservation Biology and a PhD based on research on individual rhino identification and social behaviour. He is a frequent contributor to SWARA.

As more and more land is being taken over by human settlement, new roads and other infrastructure, there is growing demand for land to be set aside to protect Kenya's wildlife and particularly endangered and iconic species such as the rhino and lions.

At the same time, populations of species such as these, that are held in fully fenced areas to avoid conflict with neighbouring communities, are outgrowing the available space.

This means there is a growing need for more wildlife conservation areas, but how easy is it to establish a wildlife sanctuary especially one that can be home to the critically endangered black rhino?

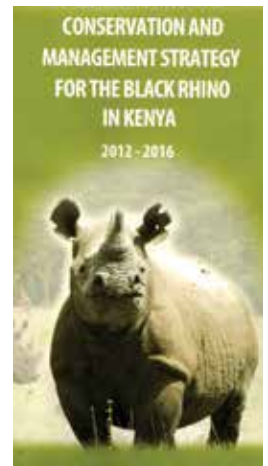
In Kenya, the Wildlife and Conservation Act 2013 lays out the legal requirements for a Wildlife Conservancy or Sanctuary. The Act states: "The Cabinet Secretary may, upon successful registration of the applicant with the County Wildlife Conservation and Compensation Committee grant a general permit for non-consumptive wildlife user rights."

Non-consumptive use includes wildlife-based

tourism, commercial photography and filming, educational purposes, research purposes, cultural purposes and religious purposes.

The Kenya Wildlife Service (KWS) has the role of advising the owners on the management, control and maintenance of the new wildlife conservation area. This includes the development of a management plan.

The Fifth Schedule of the Act details the minimum information that has to be included in the plan. It includes a legal description of the area, goals, objectives and activities, species and habitat descriptions, and community involvement. As the conservation area is developed there are additional requirements such as details relating to tourism, carrying capacity



TOP RIGHT:
KWS Black Rhino Strategy 2012-2016.

BELOW: Upgrading fence line in Sera Rhino Sanctaury.

PHOTO BY: NORTHERN RANGELANDS TRUST





TOP LEFT: A fully equipped new ranger.

TOP RIGHT: New ranger housing.

BELOW RIGHT: New water point.

and controls, measures to prevent human-wildlife conflict, monitoring systems and any further infrastructure development.

Having obtained the relevant approval and subject to the management plan, the owners can only then progress with constructing the fences, roads, buildings, tourism facilities and other such works that are needed - presuming the funds are in place to do so.

To be approved as a sanctuary for black rhinos adds further demands which are laid out in the document entitled "Conservation and

Management Strategy for the Black Rhino in Kenya 2012-2016". With the well-publicised threat from poaching, the security and law enforcement levels need to be much higher than in a general wildlife sanctuary requiring increased manpower and resources.

The health and general safety of the rhinos requires regular monitoring by specifically trained staff additional to security personnel. The monitoring system involves capturing and analysing behavioural data which means each rhino has to be individually identified with an up-to-date record kept on how to identify them, as well as records of their location.

Population figures of competing browsers (especially elephants, buffalo and giraffe) and of predators (principally lions and hyenas) are also necessary to ensure they are not negatively impacting on the growth of the rhino population. A computerised GIS-based information management system is essential for this.

The Wildlife Act and Rhino Strategy documents set the legal framework around which land owners can progress to a wildlife conservancy. But what are the practical realities? Recently, three areas have been approved and now hold black rhinos - Sera Rhino Sanctuary, Borana Conservancy and Ruma National Park.

SERA

The rhino sanctuary is part of the wider 3,450 sq km, community owned, Sera Wildlife Conservancy,

IN KENYA, THE WILDLIFE AND CONSERVATION ACT 2013 LAYS OUT THE LEGAL REQUIREMENTS FOR A WILDLIFE CONSERVANCY OR SANCTUARY.

2012

The year an Environmental Impact Assessment (EIA) for the reintroduction of rhino into Sera sanctuary was approved by NEMA.

**BELOW:
Translocation
logistics.**

created in 2002. Its conservation-focused work covers an area of 520 square kilometres, where conservancy rangers carry out wildlife monitoring and security operations, livestock grazing is carefully managed, and where there are no human settlements.

The conservation area is divided into a core area of 107 square kilometres (the Rhino Sanctuary), and a 413 square kilometre buffer zone which can act in the future as an Intensive Protection Zone (IPZ) for rhinos.

An ecological assessment of Sera was needed to determine the habitat suitability and availability for black rhino, plus a veterinary assessment of disease threats and vectors with a separate dedicated assessment for tsetse flies undertaken. Only anthrax was considered a threat, which could be controlled and managed by fencing the rhinos in and keeping cattle out.

A security assessment recommended the number of staff for both an armed and unarmed monitoring team. It recommended recruiting and training local community personnel as community rangers and as fencers and rhino monitoring staff.

To support the security system meant new vehicles, an electric fence, ranger outposts, water troughs, piping for distribution, digging of wells, installing a radio communications system and establishing informer networks.

An Environmental Impact Assessment (EIA) for the reintroduction of rhino into the sanctuary was a legal requirement and was approved by National Environment Management Authority (NEMA) in early 2012. Infrastructure work began

in early 2013 and was completed in December 2014.

The 45 km fence line demarcating the sanctuary was cleared and fence posts erected using plant, equipment and labour. The purpose of the 12-strand, electrified, metre-high fence was primarily to contain the rhino population. There were too many elephants within the enclosed area so 30 had to be removed.

Access roads, ranger tracks, four airstrips and three water points were established. Four main gates and gate house complexes were constructed which also house electric fencing energizers, and store maintenance equipment and supplies. The four ranger housing units comprise of an accommodation block, kitchen, toilets and showers. A full time pilot with a pilot house is based in the Sanctuary along with a Piper Super Club.

The recruited 18-man fence maintenance team is tasked with daily inspection, clearance and basic maintenance of the fence. A Toyota Land Cruiser was purchased to assist the team and the rhino monitoring rangers. VHF radio equipment was installed to support communication.

Recruitment specific to the Rhino Sanctuary comprised of a Conservancy Operations Officer, a Rhino Sanctuary Officer, a Rhino Security Unit (RSU) response team of 18 armed rangers, 24 unarmed Rhino Monitoring Rangers and a fence maintenance team of six. The RSU team is backed up by 29 Sera Conservancy rangers, who patrol the entire conservancy.

In order for rhinos to be released into the sanctuary, a holding facility was built in case

PHOTO BY: FELIX PATTON





TOP LEFT: A team of rangers load a rhino into vehicle in Ruma.

TOP RIGHT: Sensitising the community on rhino conservation.

there was need for veterinary intervention. The total cost of establishing the Sera Rhino Sanctuary was around \$1.7 million, with an annual operating budget of \$296,000 - the funding for which will be discussed in a future article.

BORANA

The privately owned Borana Conservancy, a 32,000-acre cattle ranch made wildlife its primary focus in 1992. The vital need for more land for rhino conservation led the shareholders, in 2008, to agree to upgrade the facilities and resources to meet KWS approval as a rhino sanctuary. As with Sera, both a habitat assessment and security assessment were carried out. The staffing, resources and infrastructure recommendations made were duly implemented.

The wildlife security now consists of 24 armed anti-poaching rangers and 74 unarmed monitoring rangers (scouts). All have been well equipped with uniforms, binoculars and radios. New housing accommodation has been built; gatehouses, fences and roads added or upgraded.



PHOTO BY: NORTHERN RANGELANDS TRUST

Heavy investment was made in training staff. The total cost of the upgrade to a rhino sanctuary meant that the annual budget went from \$400,000 to between \$900,000 and \$1 million.

RUMA

The introduction of black rhino into the government-managed Ruma National Park in 2012 gave a two-fold benefit - it improved the economic prospects for communities in western Kenya by boosting tourism while offering suitable habitat for the essential expansion of the critically endangered species.

The 120 sq km park was originally established in 1966, largely to protect the endangered population of roan antelope, but the area had also been home to black rhino as recently as the early 1950s.

Problems with bush meat poaching and human-wildlife conflict led to the erection of a simple wire fence in 1994, but many areas were vandalized and the problems persisted. In addition, Ruma was infested with the trypanosomiasis [sleeping sickness] causing tsetse fly for both livestock and humans. On the positive side, the park had minimal predators.

While a 2006 feasibility study demonstrated that Ruma needed to address the usual issues of security - fencing, water, and roads and other infrastructure developments - there was an additional, and costly, need to control the tsetse flies and introduce more grazing species such as buffaloes, zebras, plain game species and white rhinos to stimulate habitat improvement.

As with Sera and Borana, the recommended upgrades were carried out. Despite this, controlling bush meat poaching is an annual challenge requiring regular de-snaring (snares are also the cause of rhino injuries and mortality) and community sensitization at a cost of \$10,000 per year on top of the basic cost of the Rhino Unit of around \$50,000.

Whether the land is community, private or government owned/managed, the legal requirements of planning and upgrading facilities to protect and manage an endangered species such as rhinos the costs are substantial, not the least of which is the cost of catching and moving the rhinos to their new locations. How these costs are financed will be addressed in the next issue of Swara. ●

PHOTOS BY: FELIX PATTON



HIGH RHINO HORN PRICES DRIVE POACHING



LUCY VIGNE
has been studying the trade in ivory and rhino horn world-wide since the mid-1980s.



ESMOND MARTIN
specialises in monitoring the trade in wild animal products, especially rhino horn and elephant ivory.

Prices for rhino horn vary enormously along the supply chain, with various rates quoted in the media and other sources. Obtaining accurate pricing remains a challenge.

This article reports on our findings on rhino horn pricing obtained in the course of our recent travels in Kenya, Vietnam and China.

KENYA

Our price sources for rhino horn in Kenya come from poachers, brokers, and informants. The first broker will meet the poachers usually in a rural area. There are at least two poachers in a gang, usually Kenyans, Somalis or Tanzanians. The broker may provide guns and ammunition

or half the agreed amount of money in advance. The poaching gang is paid per horn, not per kilogramme. Horns from both black and white rhino species are priced the same.

To calculate the kilo price, a black rhino's average horn weight is 1.5kg (as the average black rhino has two horns weighing 3kg). A white rhino's average horn weight is 2.5kg (the average white rhino has two horns weighing 5kg). Combining the two species, an average horn weight is 2kg.

Between 2010 and 2013 a first broker paid the poachers about \$2,392 for a 2kg horn. That is \$1,196 per kg. By early 2015, however, a first broker paid \$4,300 for such a horn - that is \$2,150 a kg. This price doubled between 2013 and 2015! The first broker can sell his horn at an even higher price to a second broker who is based



PHOTOS BY: LUCY VIGNE

LEFT PAGE: This stuffed white rhino was shipped with CITES permits from Zimbabwe to China on display in 2014 in a shopping mall in Beijing.

TOP: In late 2015 we saw the same stuffed rhino in the Beijing mall hidden in an alcove, its precious horns removed for other uses!

THIS RECENT SHARP PRICE RISE IS DUE TO INCREASED COMPETITION AMONGST BROKERS FOR RHINO HORNS WITH MORE KENYAN-CHINESE CONNECTIONS.

in the towns or cities. They include Chinese, East Africans (some of Arab descent), Somalis and West Africans.

This recent sharp price rise is due to increased competition amongst brokers for rhino horns with more Kenyan-Chinese connections. There are also fewer rhino horns on the market. This is because rhino poaching has declined in Kenya from 59 in 2013, 36 in 2014 to only 11 in 2015.

Rhino poaching has fallen for several reasons. Government departments involved in wildlife conservation have improved cooperation, not only amongst themselves, but also with non-governmental organizations (NGOs), private conservationists and, most importantly, with the Association of Private Land Rhino Sanctuaries.

The Kenya Wildlife Service (KWS) has increased the number of rangers on patrol, and they have been supplied with more vehicles and night vision binoculars. Intelligence gathering also has become more effective.

\$2,392

Amount in Kenya a first broker paid poachers for a 2 kg horn between 2010 and 2013

\$4,300

Amount in Kenya a first broker paid poachers for a 2 kg horn by early 2015

A new DNA and forensic laboratory has been installed in Nairobi, allowing seized horns from rhinos with known DNA to be identified. The new Wildlife Act's fines and jail terms for rhino poachers and traders have been hugely increased, and the judiciary has become more proactive, handing down stiffer sentences. Most significantly, some 'kingpin' rhino horn exporters were arrested in 2015.

VIETNAM

At the International Union for Conservation of Nature (IUCN) African Rhino Specialist Group meeting in Tanzania in May 2008, a new threat to rhinos was discussed - demand for rhino horn in Vietnam. Some officials and businessmen in Vietnam were becoming increasingly wealthy wanting rhino horn as a status symbol and for medicinal purposes, although imports and domestic trade was illegal.

Meanwhile, Vietnamese handicrafts were steadily increasing in production, especially for export to mainland China. By around 2011, artisans in the northern villages were processing rhino horns to make various items.

In 2013, almost two million people from the mainland went to Vietnam, many for bargain shopping as Vietnamese labour is much cheaper. Although only a fraction buy rhino horn, vendors told us that the Chinese are now the main rhino horn buyers in Vietnam.

Late last year, we surveyed the ivory and rhino horn trade in Vietnam. We visited Ho Chi Minh City (Saigon) and Hanoi, but we saw no real rhino horns on display, as vendors know it is illegal and it would soon be confiscated. We also surveyed hundreds of jewellery, antique, jade and souvenir



Bangles made from the good quality inner part of this white rhino horn in Vietnam is bought mostly by mainland Chinese, leaving the rough outer edge on sale to use for traditional medicine.

outlets, but again saw no real rhino horn.

We visited the biggest city in the Central Highlands, Buon Ma Thuot. Although ivory and elephant products were commonly seen for sale, only one souvenir shop had on view a tiny pea-size piece of rhino horn priced at about \$44. The vendor explained one needed to crush the horn into powder to mix with water and drink as a tonic.

We then surveyed villages around Hanoi where artisans specialize in carvings. We learned they usually kept rhino horn items for sale very secretly and out of sight. One village, however, had on display for sale various new rhino horn objects. These included rhino horn bangles, beaded necklaces, beaded bracelets, plain oblong pendants, and traditional handle-less tiny drinking cups, all machine-made. There were raw pieces and shavings of rhino horn, left over from the processing process, wrapped in cellophane to keep them fresh for sale as medicine.

One shop vendor was showing three Chinese retail customers his rhino horn items. He had learned the Chinese language, because people from China were his main customers. Other

vendors in the village had done the same.

Chinese traders relay transaction information by telephone to suppliers in China for the best prices, carrying their rhino horn purchases back across the nearby border.

The same vendor told us that he and his family initially carved wood, but around 2011 they obtained their first rhino horn and were the first in the village to sell rhino horn objects. The family now has three shops in the village. About 10 other families today sell rhino horn as well, he said, but usually did not display it, although we photographed six retail outlets with rhino horn pieces or items on view.

Rhino horn items are made from the inner part of the horn, while the rougher outer pieces are used for medicine. These are sold to middlemen and retail buyers.

We weighed on an electronic scale a large outer piece (236g) from a rhino horn from South Africa, the vendor said, that was selling for \$13/g retail for medicine. The plain rhino horn 'trinkets', that had no skilled carving, were also sold by weight. They were four-times the price at \$53/g retail. A 30g oblong pendant was \$1,590; a 29g cup was



PHOTOS BY LUCY WIGNE

A Chinese customer in Vietnam examines newly made illegal rhino horn items for retail sale: bangles, a plain oblong pendant, a beaded bracelet and a small cup. The vendor told us the rhino horn came from South Africa.

\$1,573; a 37g bangle was \$1,961, and a 61g beaded bracelet was \$3,233.

Despite these high prices, we learned that two years before, prices had been double for rhino horn, wholesale and retail. We learned from a traditional Vietnamese medicine doctor that in 2015, African rhino horn was priced wholesale at \$35,100/kg. Karl Ammann (photographer and writer) found in October 2015 that rhino horn was selling wholesale for \$30,500/kg in Vietnam and Laos, compared to \$65,000/kg in 2012/13.

CHINA

China was the biggest importer and consumer of African rhino horn, along with Yemen, in the late 20th century. There was a lull in the markets from around 1993 - when China banned the domestic trade in rhino horn - until about 2008, when China's economy soared. In the early 2000s, 'nouveau riche' Chinese could afford rhino horn, flouting international and national bans.

In April/May 2014, we visited Beijing and Shanghai to survey the ivory and rhino horn trade. We revisited these cities and surveyed six other cities in October/November 2015, finding

ivory factories and retail outlets potentially selling ivory and rhino horn.

Shopkeepers are becoming increasingly suspicious of customers interested in rhino horn. Most transactions occur behind closed doors and online. In 2014 we had seen fake rhino horns for sale, but very little real rhino horn. In a shopping mall specialising in antiques, was an old rhino horn handle (12 x 4 cm) for a dagger. The vendor shone a torch through it showing the distinctive hair strands. He said its price was \$10,620. There were occasional supposedly rhino horn carved antique libation cups and bowls, mostly seen in Shanghai in a specialised art collectors' show room, but often these are fakes.

Chinese traditional medicine shops do not display rhino horn for sale because it is illegal. So again in 2015 we looked in retail outlets selling antiques, jade, jewellery, stones, souvenirs and wood carvings for rhino horn.

Only in one jade shop in Tianjin did we see for sale four small pieces of new rhino horn under the glass countertop. The vendor did not know their origin, only their use for traditional Chinese medicine. The small sizes show that customers need only tiny amounts of rhino horn for their health.

They were wrapped in cellophane to keep fresh. Each was labelled with the weight. These were \$21,835 for a 55g piece, \$21,123 for a 53.4g piece, and \$3,481 for pieces of 8.1g and 8g. The vendor offered a 40 per cent discount. This is a still huge price at \$248/g. This is the highest retail price we know offered for a piece of rhino horn. Karl Ammann learned from informers in China that in 2014 and 2015 rhino horn retailed at \$120/g which is more usual.

In Guangzhou, according to Karl Ammann's fieldwork, raw rhino horn wholesale was the equivalent of \$31,452/kg in June 2015, and \$30,000/kg in August 2015, and the same again in October 2015, but this was down from \$65,000/kg in 2012. The wholesale price had thus fallen by half, as in Vietnam.

PUBLISHED PRICES

The international media usually publish incorrect rhino horn prices which often do not give the distinction between the different levels in the trading chain - such as the amount each poacher is paid and what a third broker receives in Asia from the second broker in Africa.

The reports often do not clarify whether the prices given in Asia are wholesale kilo prices or retail gramme prices, nor whether they refer to raw or worked products. Unfortunately, inflated



PHOTO BY: LUCY VIGNE

Fake rhino horns, such as this one, are made in Vietnam from cow or water buffalo horn and sold as ornaments.

prices quoted in the media can result in even greater incentives to kill rhinos and trade in their horns. The media must therefore avoid exaggerating the figures.

CONCLUSION

In Kenya, the price of rhino horn received by poachers doubled between 2013 and 2015 (\$1,196/kg to \$2,392/kg). This is due to a growing scarcity of horn on the Kenyan market, and also probably rising demand with increased African-Chinese interaction.

However, although still high, wholesale prices for rhino horns in China and Vietnam almost halved during this period from about \$65,000/kg to \$35,000/kg. The retail prices in Vietnam for new worked rhino horn on display for sale, which are mostly machine-processed into jewellery, have also roughly halved from 2013-2015 from \$95/g to \$53/g. This is perhaps because more rhino horn came onto the Asian market, with heavy poaching in South Africa of over 1,000

rhinos a year from 2013 to 2015, along with horns from poached animals in other range states, privately owned horns, and stolen government stocks.

In China, retail prices are higher. The price for small pieces of rhino horn sold for traditional medicine in China on display in an expensive outlet can be as much as \$248/g, but \$120/g was more common for secretive retail sales in 2015. With retail prices much higher for rhino horn, some retail customers travel to certain village shops near Hanoi to buy rhino horn (both raw for medicine and processed for ornaments), and in growing numbers. Chinese traders do the same.

In 2015, the wholesale price in Vietnam and China for rhino horn was about 16 times higher (\$35,000/kg) than is received by a poaching gang in Kenya (\$2,150/kg). Even if the mark up halves again, there is much money to be made at all levels of the supply chain. The strong incentive to poach rhinos and to trade in rhino horn is thus not expected to abate soon. ●

COMBATING ILLEGAL LOGGING IN EAST AFRICA

NEW WAYS TO TACKLE AN OLD CRIME



DAVID ODEE is a Chief Research Officer with the Kenya Forestry Research Institute (KEFRI), Nairobi, and a Visiting Research Fellow at the Centre for Ecology and

Hydrology (CEH), Edinburgh, UK. He has a PhD in Forest Ecology, with research interests in Forest Biotechnology and Ecosystem Services.

As the international community grapples with the issues of illegal logging and illicit timber trade in an effort to save the globe's dwindling forests, the lack of technological capacity in wood producing and transiting countries has been cited as one of the major stumbling blocks in combating the crime. Although less visible than the equally deplorable poaching of iconic wildlife, the cost of global forest-related crimes, including corporate, illegal logging and illegal timber trade is estimated at \$50 - \$152 billion per year,

according to a report of the United Nations Environment Programme (UNEP) and the International Criminal Police Organization (INTERPOL) released to coincide with this year's World Environment Day. Apart from forest degradation, illegal logging and illegal timber have undesirable cumulative effects on biodiversity, greenhouse gas emissions and global warming. Ultimately, these crimes pose a serious threat to tropical forest ecosystems and require concerted, multi-faceted strategies to tackle at all levels-from tree harvesting to the market destinations.

Deterrent legislation now exists in some of the major destination countries. The European Union's Timber Regulation (EUTR) legislation is aimed at combatting illegal logging and trade of illegally sourced timber by requiring importers to conduct due diligence to ensure the products are

\$50-150 BILLION

Value in trade of illegally obtained timber and other forest-related crimes annually

Marked timber logs at SEPBC in Doula, Cameroon, before shipment and export to international markets. DNA samples for verifying species and origin can be collected at any stage of the chain of custody.



PHOTO BY: D. ODEE



PHOTO BY: J. CICHERU

Priscilla Kimani of KEFRI collecting cambial tissue from Mvule tree (*Milicia excelsa*) at Nguriunditu Valley Forest, Muguga, Kenya.

legally obtained. Evidence of species identity and country of harvest is essential, under that law. Until recently, the timber verification process was mostly based on visual characteristics. However, these conventional methods are wanting in detection, and are no longer able to match the shrewdness of traffickers in disguising the identity and source of illegal timber, especially at cross-border inspections. Thus, illegal forest activities require enhanced detection capabilities for monitoring and tracking of timber and forest products, particularly in exporting and transiting

countries. Consequently, the use of innovative and robust verification methods applied at any point during transit are integral to the fight against illegal logging and the illegal timber trade. DNA and stable isotope techniques are at the core of our innovations to complement the conventional methods. Felix Paton's article "*Wildlife CSI- Forensics Help in the Battle Against Poaching*" (SWARA October-December 2015) has articulated the use of DNA and stable isotope technologies to provide evidence of wildlife crime.

THUS, ILLEGAL FOREST ACTIVITIES REQUIRE ENHANCED DETECTION CAPABILITIES FOR MONITORING AND TRACKING OF TIMBER AND FOREST PRODUCTS, PARTICULARLY IN EXPORTING AND TRANSITING COUNTRIES.

In the past four years, a project funded by the International Tropical Timber Organization (ITTO) and USAID has been developing national and regional capacities in timber exporting and transiting countries to provide failsafe technological tools to verify the legality of traded timber in terms of identity and source. Coordinated by Thünen



PHOTO BY: B. DEGEN



PHOTO BY: D. ODEE

Institute of Forest Genetics in Germany, the project comprised 14 collaborating agencies in Africa, Europe, Asia and the Pacific. In Africa, the project was implemented in the timber producing and ITTO member countries - Cameroon, the Republic of the Congo, the Democratic Republic of Congo (DRC), Côte d'Ivoire, Gabon, Ghana, and Kenya, a regionally important player in terms of importation, transit or exit point to neighbouring and international markets.

Some 15 African scientists and technicians received specialised training in workshops, as well as intensive hands-on experience. Key staff from African laboratories gained complementary skills in participating European laboratories, namely the Centre for Ecology and Hydrology in Edinburgh, Scotland; University of Brussels; and Thünen Institute of Forest Genetics, Germany. Training involved collection, handling and preparation of samples, development of markers

(DNA, wood anatomy and stable isotopes), and analysis and database management. Three appropriately equipped reference laboratories have been established in tropical Africa. They are the Forest Research Institute in Kumasi, Ghana; Institut de Recherche en Ecologie Tropicale, Libreville, Gabon; and Kenya Forestry Research Institute (KEFRI), Nairobi. KEFRI's John Gicheru, Emmanuel Makatiani, John Ochieng and Priscilla Kimani are among key trained staff who are now running the reference laboratory.

The first step was to develop and build reference databases for priority species. To do this, the ITTO project collected reference material from more than 5,400 leaf, cambium and wood samples originating from different populations across their natural range in tropical Africa. Three species, namely Mvule (*Milicia excelsa*), which is categorised as 'near threatened' by the International Union for Conservation of Nature

TOP: Céline Jolivet of Thünen Institute leading a Regional Training Workshop at KEFRI Reference Laboratory, Nairobi.

BELOW: KEFRI staff inspecting Sandalwood logs and uprooted stumps of mixed sources impounded by the Kenya Wildlife Service (KWS), Kibwezi, Kenya. Determining source could help identify overexploited.



TOP: Preparing logs for processing of timber products at ALPICAM, Douala, Cameroon.

BELOW: The African Mahogany (*Khaya anthotheca*), an IUCN Red List species, Kakamega Forest, Kenya. The new tools will help identify and protect vulnerable species.

(IUCN), Sapelli (*Entandrophragma cylindricum*) and Ayous (*Triplochiton scleroxylon*) were selected in the pilot phase for development of DNA fingerprinting, stable isotope and anatomical reference databases for verifying declared geographic origin of wood. These species are harvested and traded in significant volumes, are economically important, and widely distributed throughout tropical Africa. Their combined yearly timber production in natural forests located in the participating African countries is estimated at more than 10 million cubic metres, of which more than one million cubic metres is exported.

DNA fingerprinting is performed using multiple genetic markers which are chosen for their ability to discriminate between individuals, populations or species on the basis of differences in their DNA. Development of genetic markers begins with extraction of DNA from samples. Specific regions within the DNA, sometimes within genes, is analysed from extracted DNA and sequences which are unique to the individual, population or species are chosen and used as DNA fingerprints. This information is then deposited at databases shared among the ITTO reference laboratories. A search is carried out for matching fingerprints within the database to determine the species

identity of the timber sample. Searches may also be carried out in other publicly available databases with fingerprints of the same genes.

Several groups are increasingly using DNA fingerprinting [popularly known as DNA barcoding] to identify species.

One of them is the Consortium for the Barcode of Life (CBOL), an international initiative at the Smithsonian Institution National Museum of Natural History, Washington, D.C. However, species identity alone may not be sufficient as most traffickers have perfected the art of either falsifying geographic origin or mixing illegal with legal timber. These are perhaps the most common practices of the illegal timber trade, and determination of species identity and source may make a world of difference in nabbing the perpetrators. As part of the innovative strategy to also verify the source, the project went a step further to develop more than 1,000 gene markers





PHOTOS BY: D. ODEE

using the single nucleotide polymorphisms (SNPs) in the DNA, and genotyping all samples for at least 70 SNPs, enabling the definition of similarity groups into geographic profiles used to create genetic reference maps for verifying claims of geographic origin. Additionally, the project has developed a database of stable isotopes of carbon, hydrogen, nitrogen, oxygen, strontium and sulphur analysed within tissue samples for each of the three species. The distribution of natural stable isotope abundance signatures are influenced by ecological, climatic and geological factors, and can, therefore, be used to determine the geographic origin of a sample. A combination of these tools are now routinely used in Thünen Institute.

Since the EU Timber Regulation (EUTR) came into effect in March 2013, Thünen Institute has seen a dramatic increase (over 300 per cent) in wood samples submitted by timber traders, competent authorities, non-governmental organisations and private citizens, seeking to verify species identity and origin of timber claims made by suppliers. The EUTR legislation made it illegal to put illegally harvested timber and timber products in the EU market. Similar regulatory frameworks also exist elsewhere, e.g. USA Lacey Act, Australia Illegal Logging Prohibition Act,

and our own and recent 'Zanzibar Declaration' signed by the national forest agencies of Kenya, Tanzania, Uganda, Madagascar and Mozambique to jointly combat illegal timber trade in Eastern and Southern Africa. The East African countries, comprising Tanzania, Kenya, Uganda, Rwanda, Burundi and South Sudan are essentially consumers of imported timber with only a fraction exported to Europe and Asian countries through the region's ports. It is thus crucial that we also build our regional capability.

As a reference lab with verified technical competence, KEFRI is leading an initiative to build a collaborative East African network with Tanzania Forestry Research Institute (TAFORI), National Forestry Resources Research Institute (NaFORRI) of Uganda and other stakeholders to extend the capability for testing claims of species and geographic origin in order to reduce illegal and unsustainable trade in timber and forest products in the region. Several species of regional socio-ecological and conservation concern are earmarked. They include the East African Sandalwood (*Osyris lanceolata*), Mpingo or African Blackwood (*Dalbergia melanoxylon*) and African Mahogany (*Khaya anthotheca*), to name a few. We will be reporting the developments in future issues of Swara magazine. ●

Processed timber products warehoused in ALPICAM, Douala, Cameroon. ALPICAM Ltd. is an international trading company exporting timber products from Cameroon.

Kenya's new law on Wildlife crime has impact despite flaws - report

BY JOHN NYAGA

Kenya's new law on wildlife conservation has transformed the prosecution of wildlife crime in the country, but enforcement continues to be dogged by ambiguities in the text and other shortcomings, according to the findings of a study by WildlifeDirect.

The study, entitled "Outcome of Court Trials in the First Two Years of Implementation of the Wildlife Conservation and Management Act (WCMA), 2013," examines progress made in wildlife trials in Kenya in 2014 and 2015.

"While much has improved since the enactment of the new law, Kenya has not achieved the desired situation, where the possibility or arrest, the

certainty of a speedy trial leading to conviction and the probability of receiving a custodial sentence have a decisive deterrent effect on wildlife criminals," according to the report, which is based on court monitoring.

Notably, in a precedent setting ruling, a court found the section of the law that provided for exemplary penalties for crimes against endangered species ambiguous and therefore invalid, the report observes.

It makes a series of recommendations for policy and legislative reforms, prosecution and enforcement changes, judicial reforms and improvements in outreach programmes.

A previous study by WildlifeDirect on wildlife crime trials in 18 courts between 2008 and 2013 had concluded that Kenya was a safe haven for

wildlife criminals because of major weaknesses in the legal framework.

In its latest report, WildlifeDirect - a charitable organization founded by renowned conservationist Richard Leakey and registered in Kenya and the United States to support African efforts to ensure justice for wildlife - voices cautious optimism on the progress being made in Kenya on wildlife trials as a result of the implementation of reforms led by President Uhuru Kenyatta. The efforts by both the government and conservation groups have already borne fruit in the form of a 80 per cent fall in the poaching of rhinos and elephants between 2012 and 2015.

The study notes that the enactment of the WCMA in January 2014 has been complemented by improvements in law enforcement, including the creation



of a Wildlife Crime Prosecution Unit (WCPU) in the Office of the Director of Prosecutions. The proportion of suspects pleading guilty declined from 65 per cent during the 2008–2013 period to 48 per cent in 2014 and 19 per cent in 2015. The report attributes the trend to suspects avoiding a guilty plea that could lead to significantly higher penalties. Opting for trial, they hoped, could result in better outcomes.

For those awaiting trial, bail or bond requirements were considerably higher in 2014 and 2015, compared to the previous period. For the first time in Kenya, a significant number of wildlife crime suspects were denied bail or bond and were held in custody awaiting trial, the report notes.

Despite the increase in 'not guilty pleas,' overall conviction rates fell only slightly in 2014 and recovered to over 75 per cent in 2015, similar to the 2008–2013 period. The proportion of convicted persons receiving jail sentences rose from three per cent in 2008–2013 to 6.5 per cent in 2014 and six per cent in 2015.

The figures also show that the overwhelming majority of convicted offenders continue to receive non-custodial sentences. Between 2014 and



WildlifeDirect Kenya Chairman, Philip Murgor hands over the report to KWS Director, Kitili Mbathi.

PHOTO BY: WILDLIFEDIRECT KENYA

2015, there was a shift towards the imposition of community service orders instead of fines, which might signify continuing failure by some magistrates to view wildlife crime as a serious offence, the report notes.

It highlights a number of high-profile cases it says are a cause for concern. Nearly all foreigners arrested at Jomo

Kenyatta International Airport in Nairobi in 2014 and 2015, mostly in transit, were able to leave the country after paying a fine.

It emphasizes that allowing foreigners to leave immediately after paying the fines meant that Kenya lost the opportunity to extract information on transnational criminals and to

collaborate with other countries in disrupting the operations of international criminal networks and cartels. The lack of a centralized database and biodata of convicted persons compounded that problem. ●

John Nyaga is the editor of Swara magazine.

Chilli Pepper Dispenser to Repulse Trespassing Elephants

In elephant range states, human-elephant conflict (HEC) is considered a serious handicap to the possibility of peaceful coexistence between free ranging elephants and their neighbouring human communities.

Among measures promoted to mitigate HEC, the use of chilli pepper as an olfactory elephant repellent has been popularized as a passive form of deterrent, according to a research paper appearing in the current issue of *Pachyderm*, a journal published by the African Elephant, African Rhino and Asian Rhino Specialist Groups.

To extend its use, a gas dispenser was developed that employed ping-pong balls filled with chilli oil extract as projectiles, according to the paper by Sébastien Le Bel.

Following an initial test in Hwange National Park, Zimbabwe, in 2007, a further series of field tests was conducted in Mozambique, Zambia and Zimbabwe over the 2009–2013 period to improve the dispenser and to separate off the specific effects of chilli pepper.

From more than 300 attempts to deter problem elephants, it was possible to conclude that noise, the impact of the projectile on the elephant and the release of a cloud of chilli pepper, only the exposure to chilli pepper functioned as an efficient deterrent. The paper discusses the problem of sourcing chilli pepper in sufficient quantities,

and describes an advanced prototype of the dispenser using an industrial moulding process.

Successful integration of this new device with other more traditional mitigation approaches may increase human tolerance of elephants by teaching the latter to respect established boundaries and stay clear of farmed crops.

As human-wildlife conflict mitigation seeks to increase human tolerance towards wildlife species and decrease negative interactions with them, the improvement of community tolerance towards wildlife must start by enabling them to protect themselves and to adopt less risky responses when confronting dangerous animals, the paper notes.

It says that while no “stand alone” solution to HEC currently exists, present traditional approaches provide the basis for development of a range of applicable solutions that are adapted to local conditions, enabling targeted intervention on specific problematic elephants at the crop interface.

When employing the concept of memory fences, using an active chilli pepper dispenser will help crop-raiding elephants to respect human activities and settlements through a discipline learning curve. In addition to crop protection, this approach could



improve the functioning of elephant corridors, for example in the Selous Game Reserve in Tanzania, which is being blocked off with the result of an increased level of HEC.

However, all the tools and strategies being developed should not divert attention from the need to promote and improve wildlife-based revenue ventures, which are essential for ensuring long-term human-wildlife coexistence, the paper adds. ●

Pachyderm Journal is available at: www.pachydermjournal.org

AFRICAN CROWNED EAGLES

ROYALS IN RESIDENCE AT RONDO RETREAT



JULIA FULCHER

was born and schooled in Kenya, finishing her studies in England. She has her B.A in education and

her adult life has been given to teaching in Kenya and Irian Jaya. She currently serves with Trinity Fellowship in the Nairobi office and its Rondo Retreat Centre in the Kakamega Forest, contributing to the conservation of the one and only Rain Forest in Kenya.







her high pitched shriek echoes plaintively over the forest canopy.

This largest of Kenyan eagles is a rare bird, with only an estimated 10 nesting pairs countrywide. Both male and female are similar in the colouring of their plumage and therefore hard to distinguish one from the other, though the female is the larger of the two. They can also be distinguished by careful observation of their behavior as they play their respective roles.

December, and the female sits patiently in the nest, and we are as yet left wondering whether there is a chick or not. The male makes periodic food drops of a variety of delicacies, and is off once more. She can be seen in the nest, gripping the food with a clawed foot, dipping her head and with an upward jerk, ripping the flesh and swallowing the tasty morsel.

The head down, tail up, bobbing up and down action is a telltale sign of fine dining. The midday sun blazes down on her, and she pants in an effort to keep cool.

Early mornings she could be seen perched on the top-most leafless branches of a tree at the edge of the garden, catching the rising sun. But she is back in a jiffy if anything comes close to the nest! She is always in the immediate vicinity, keeping an eagle eye on all the goings on.

SOVEREIGNS OF THE AIR HAVE A HEIR

Our wait is over and on 3 January 2016. A little white patch in the nest caught my eye. Zooming in on the nest confirmed my first glimpse of the young, totally white chick. Now there is no doubt, the sovereigns of the air are indisputably the proud parents of a crowned prince – or princess.

The young chick, of around one month, wobbled as it changed position in the nest and flopped back down out of sight. Early sightings were infrequent. We watched as

The young prince shows off his crown.

14

The average life expectancy in years of a African crowned eagle.

A pair of African Crowned Eagles are refurbishing their nest, set atop the lofty *Antiaris toxicaria*, the tallest and usually monkey-free tree, in Rondo Retreat's garden.

This tree has seen feathered fowl nest and rear their young, including the Great Blue Turaco, but for now, Kenya's largest eagle has taken up residence, surrounded by a colony of noisy Vieillot's Black Weavers, found only in Kakamega in Kenya, who provide the musical entertainment for the King of the Air.

Small branches are broken off from nearby trees and flown in to the rapidly expanding construction. What it lacks in beauty it makes up for in size. The weavers, their neighbours, definitely take the prize when it comes to nest building!

Late September 2015 sees the female sitting in her nest, with an incubation period of around 50 days, while her mate supplies her with food. Other than the non-stop chatter of the weavers, the female enjoys or endures a relatively solitary confinement in her royal residence. She is largely silent, unless of course she is hungry, when

A GROWN EAGLE IN FULL FLIGHT IS A FORMIDABLE SIGHT, WITH ITS STRONG HOOKED BEAK, SHARP TALONS AND MASSIVE SIZE OF 32- 36 INCHES (81- 92 CM), NOT TO MENTION THE GREAT WING SPAN.

mother broke off and brought in soft new leafy bedding to line the nest, keeping her chick comfortable, and as she remained protectively in the nest while dad did the hunting. Even at this tender age, I watched as mother carnivorously ripped off small pieces of meat and fed it to her baby.

The duty of feeding the family fell solely on the male. He tends to hunt further from the nest, soaring over the forest far and wide, but beware monkeys! Colobus is undoubtedly a staple and perhaps a favourite, but other small animals, from tree hyrax to small antelope are also on the menu.

A grown eagle in full flight is a formidable sight, with its strong hooked beak, sharp talons and massive size of 32- 36 inches (81- 92 cm), not to mention the great wing span. He is not to be trifled with and is a truly majestic sight as he soars over the forest, checking out the pickings for their next feast, .

The Blue, Colobus and Red-tailed monkeys are frequent visitors to Rondo's garden, and inhabit the Kakamega Rainforest, despite the presence of this predator. They go about their daily life, feeding themselves and their young, but when the eagle is on the move, they best be on high alert!

EAT OR BE EATEN

The monkeys' warning cry can be heard and they are seen dropping to the ground for safety in an effort to escape a grizzly end. Indeed one visitor was given a rare treat as he walked by the stream in Rondo's lower garden when the eagle flew overhead and the shy Red-tailed monkeys dropped to the ground surrounding him, and just as quickly, when danger had passed, scampered

5-5.9

**Wingspan in feet
of an adult African
African Crowned
Eagle**

**Preening his princely
feathers.**

back into the trees to resume their business of feeding. Eat or be eaten is after all the law of the jungle.

My next stint at Rondo, in March-April, was incredible. Junior had grown considerably -now about 4-5 months old. Parents rear one chick at a time, which is probably all they can manage due to the voracious appetites of both mother and the growing juvenile.

The youngster at this stage spends considerable time sitting out of the shrinking nest on a large branch, sunning and preening himself and gazing at the world around him and at other times playing with a stick from his nest, holding it in his beak and quite likely dropping a few.

On yet another, he used both beak and claws to break off a small twig. His play is good preparation for the day when he will become a nest builder himself, no doubt.

The excitement mounts for all our visitors at Rondo, as we watch the juvenile make its early solo flights. Leaving the nest is not so difficult, as it is downhill - so to speak! Coming in for landing is a bit more technical and junior must choose his spot with care. He has not quite mastered the art and his efforts at this stage are somewhat clumsy.

His flights are short, though he showed increasing strength, control, co-ordination and confidence with each flight. The hardest part was returning to the nest, for now it was definitely uphill! He flew from tree to tree, gradually

PHOTOS BY: JULIA FULCHER





climbing higher for a clear shot at the nest. From time to time mother called to him from the forest and he flew to her, or from the nest with a treat, no doubt, urging him home, but for the most part, he had to figure out this flying business all by himself.

When he plucked up courage, it would be head down, wings up and take off - or maybe not! Sometimes he aborted the flight. After one rather terrifying and stressful flying session, he didn't leave the nest for a couple of days, needing to gain confidence once again, it would appear.

At this time, Toto takes all his food in his nest. Yes, he enjoys room service and breakfast in bed as is befitting a young prince. We had a great show of dad flying in the breakfast - the tail end of a Colobus! He stopped first in a nearby tree, allowing me a photo session before heading to the aerie, dragging the kill in his fearsome talons with flying leaps, to make the food drop. He didn't stay long, and was soon on his way. Toto can well feed himself, though he has not quite perfected the art of biting off manageable sized pieces, and definitely bites off more than he can chew - not very princely manners!

But when mum is in the nest, he is her baby boy once again, lying low in the nest, begging her attention. It is as if he asks her to cut up his food for him and feed him. He enjoys the tender loving

care from his adoring mother. I've seen bits of fur fly, as they attack the latest catch, both mum and juvenile tuck into tasty chunks of meat, mother nicely cutting up small mouthfuls of juicy red meat and feeding her young and Toto doing his best to feed himself.

I snapped photos of junior trying to line up a rather large morsel, tossing his head this way and that before finally choking it down. Zooming in I realized that he was swallowing the hand of a colobus! That couldn't have been comfortable or easy to digest.

In the last week of April, the parents destroyed the nest completely leaving junior to his own devices. He came up trumps when on 28 April, aged five months, he made his first kill, of a small Red-tailed monkey, by Rondo's fish pond, carrying it to his new tree of choice, on the edge of Rondo's garden.

So we wait for the next installment in the life of this happy regal family, with all this excitement happening right on our doorstep at Rondo. And as if that wasn't enough, the Great Blue and Ross's Turaco were also much in evidence, along with a goodly variety of forest birds and wildlife. We really couldn't have been more spoilt. It's enough to make "twitchers" out of the most casual of bird watchers - so best beware! ●



TOP: Sharing a light repast with his mother.

BELOW: A cute, coy pose for the camera.

Survey shows low nest count for critically endangered Taita Apalis



RUPI MANGAT writes about travel for Saturday magazine and environmental articles for The East African (both published by Nation media) and is editor of the Wildlife Clubs of Kenya magazine, Komba.

TOP RIGHT: An adult male Taita Apalis.

BELOW: Vuria, the highest peak in the Taita hills is also home to one of the few surviving Apalis populations.

Researchers have voiced concern over the fate critically endangered song bird, the Taita Apalis, which is found only in the high forest patches of the Taita Hills in Kenya, noting that 90 per cent of the bird's nests have been damaged or plundered by predators, human disturbance and livestock.

The high rate of nest predation is worrying especially since the Taita Apalis could potentially become Kenya's first bird to go dodo - or extinct - as the dodo did in Mauritius Island. An estimated 45-90 pairs survive today.

"It's among the highest rate of predation I have ever read about in the world," said Luca Borghesio, a forest biologist studying globally endangered birds.

A preliminary count of Taita Apalis by Daina Samba in 2001 when she was working on her master's degree thesis showed that there were 600 Taita Apalis then.

In 2009, Borghesio and Mwangi Githiru of the National Museums of Kenya, who is the 'species guardian' [a scientist who has knowledge of a species that is critically endangered], looked at the data on the bird and were concerned.



PHOTOS BY DR. LUCA BORGHESIO

Borghesio says there is still hope for the Taita Apalis. It will require reconnecting the forest patches of the misty mountains of the Taita Hills, which were previously connected, but have since been separated by deforestation.

"This is something that has no equal in Kenya and probably in Africa," he says. "There are very few examples of large-scale forest restoration in the world."

The Taita Apalis is choosy when deciding where to live. Granted, it lives in the high indigenous forests of the Taita Hills, but within these forests it chooses spots that have opened up when the



THE HIGH RATE OF NEST PREDATION IS WORRYING ESPECIALLY SINCE THE TAITA APALIS COULD POTENTIALLY BECOME KENYA'S FIRST BIRD TO GO DODO - OR EXTINCT - AS THE DODO DID IN MAURITIUS ISLAND.





PHOTOS BY: DR. LUCA BORGHESIO

TOP: Taita Apalis nesting habitat in Ngangao forest, Taita hills.

BELOW: A researcher observes a nest of Taita Apalis. About 90% of the nests are lost to predation or human disturbance.

towering trees that have reached the end of their lifespan come crashing down. The bird then builds its nest in the scrub growing in these patches.

“The simplest way to increase the population of Taita Apalis is by expanding the natural habitat,” continues Borghesio. “In the Taita Hills, a lot of the indigenous forests have been replaced by exotic trees. If we get rid of these exotic plantations, then it’s possible to expand the habitat of the Taita Apalis.”

An experiment to restore indigenous forests which are under exotic tree plantations is under-way with funding from the Royal Society for the Protection of Birds (RSPB) and The Mohammed bin Zayed Species Conservation Fund, in collaboration with the Kenya Forest Service.

But it has been challenging to work in a difficult terrain that covers 400 square kilometres. The high peaks of the Taita Hills are shrouded in a freezing white mist with only a few hours of sunshine for most of the day. Yet they are home to some of the rarest and endemic species of plants and animals not found anywhere else in the world.

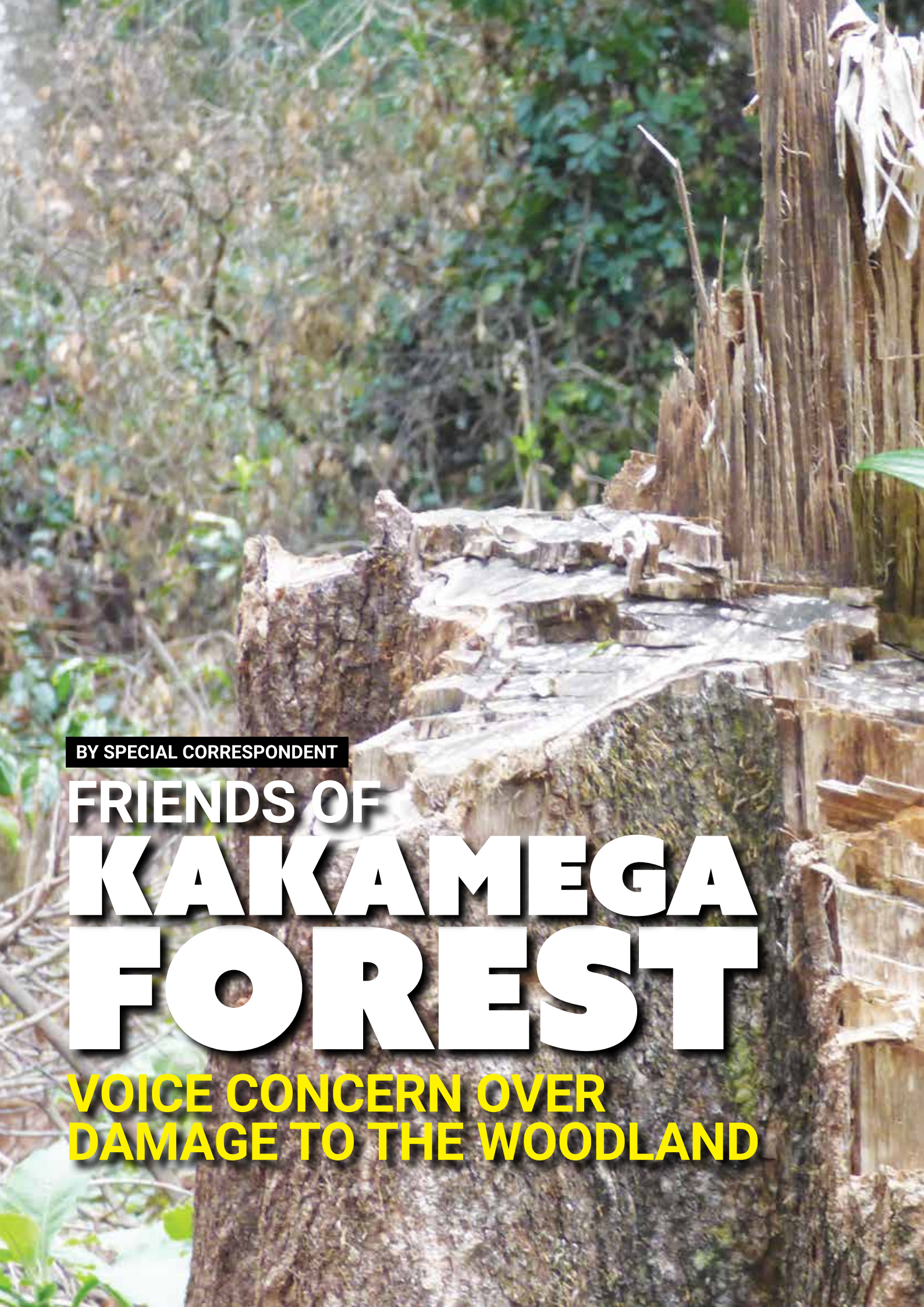
“We’re working in a highly modified landscape where the natural landscape has been reduced by 95 per cent. So we’re trying to restore these hills by increasing the natural habitat and also the connectivity between the forest patches,” says Borghesio.

“This is the first serious study of the Taita Apalis and it’s a critically endangered species. If we don’t know anything about its biology, it will go extinct.” It means studying everything about its habitat, habit and population.

But the Taita Apalis is not the only rare species in the high glades of the Taita Hills that could become extinct if nothing is done soon. The Taita thrush is also endangered, but with little funding the team is strapped for resources. There are currently 500-1,000 of the Taita thrush. Nature Kenya, Kenya’s BirdLife Partner is spearheading a campaign to save the bird from the brink of extinction with a fund-raising appeal to buy or lease parcels of land on the hill tops of the Taita Hills.

If the Taita Apalis continues to sing its duets in the indigenous forests of the Taita, it will be a success story - one of its kind for Kenya and the world. ●

For more info: http://www.naturekenya.org/content/help_save_taita_apalis



BY SPECIAL CORRESPONDENT

FRIENDS OF **KAKAMEGA FOREST**

**VOICE CONCERN OVER
DAMAGE TO THE WOODLAND**



PHOTOS BY: FRIENDS OF KAKAMEGA FOREST

The Kakamega rainforest is the only rainforest in Kenya - the last remnant of forests that stretched across Africa. As such this forest is unique in its flora and fauna, some of it endemic to the wetland.

It is a gem of a place - a hot spot for birders, snake lovers - you name it. For the African Grey Parrot this is its only home in Kenya. Should the forest disappear, so too will the parrot. The different plant species are needed to sustain the variety of fauna, and likewise the animals and insects play their part in propagating the flora.

The forest is supposed to be preserved for scientific research and eco-tourism only. The local communities are allowed to carry fallen branches

from the roadside and graze livestock in glades in a well-regulated fashion - under supervision. But, unfortunately, this has not been the case.

It is heartbreaking to see and hear of the damage that is taking place in the forest. The plight of the forest is written on the wall, should no serious action be taken. The forest is under extreme pressure from the local community, and perhaps others daily.

On any given day, at any time, as one passes through the forest, one can see people coming and going with loads of wood on their head, or men carrying wood on their bikes, past the barrier.

Fabulous forest giants felled in the heart of the forest – for charcoal!

INSET: Cattle left unattended trample their way deep in the forest to the Yala River – a danger to new forest growth!



Tomorrow's forest – young saplings – hauled out on an hourly and daily basis, leaving a thinning forest.

Most of the wood is clearly not fallen branches. A lot of it is young saplings, tomorrow's forest, and sometimes rather more mature trees.

As one walks in the forest, there is evidence of indigenous trees that have been cut down. Some are felled and left to dry before they are cut up and hauled out. Others are used to fire up the kilns in the forest for charcoal making.

Indigenous forest trees are made into charcoal. Smoke rising from these charcoal kilns can be seen from the top of Lirhanda Hill. A site has just been noticed deep in the forest, near Iloro, where trees are currently being cut down and charcoal-burning is underway.

The woodcutters have been camping in this area, complete with mosquito nets to keep the pests off

as they sleep at night! This is serious logging of huge indigenous trees. This story is being repeated in various parts of the forest.

We witnessed some suspicious movement out of the forest - people carrying chain saws - one Sunday afternoon, probably a sign of illegal harvesting of indigenous trees, after "legal harvesting" of plantation trees.

Cows left by themselves are trampling their way through the forest, even as far as the Yala River, doing yet more damage to young saplings. They can be seen at night on the road or even at the top of Lirhanda hill.

Trapping of monkeys, baboon, guinea fowl and other animals for bush meat is taking place. Hunting dogs accompany the trappers.

The forest is thinning badly due to the incursions on a daily basis by people collecting "firewood" - often saplings. The logging, "legal" or illegal has intensified. Many little paths can be seen crisscrossing the forest where this was not the case previously. Acres of the forest have been decimated, showing systematic and sustained

THE FOREST IS THINNING BADLY DUE TO THE INCURSIONS ON A DAILY BASIS BY PEOPLE COLLECTING "FIREWOOD" - OFTEN SAPLINGS.



PHOTOS BY: FRIENDS OF KAKAMEGA FOREST

TOP LEFT: The forest “walks” out and is “biked” out!

TOP RIGHT: Illegal activity? Chains and chain-saw loaded up in the car and carried off

BELOW RIGHT: A freshly laid trap – preying on forest fowl. Now that is foul play!

abuse and now guava groves have taken their place. This is what lies behind the façade of tall forest trees that one sees when driving along the road.

It should be noted that there are several milling sites, not just on the main road, but also on side roads. There is concern about the movement of sugar cane trailers, huge trucks and trailers and other vehicles passing through the forest at all hours of the day and night. Not only do they damage the road, even as they evade the police, there is also concern that illegally logged wood could be transported in this manner. It is a great disturbance and danger to the forest creatures as well as pedestrians.

Last year, the rainfall recorded in the forest was the lowest ever since 2003. The Kakamega Rainforest is an important rain catchment area, contributing about 75 per cent of the water that feeds Lake Victoria and flows out as River Nile into Sudan and Egypt. Damage to the forest is, therefore, not only a national concern but an international one.

Those that say the logging taking place is “legal” are either not in the picture, not facing the harsh reality or are covering up.

In 1994, an open area of seriously degraded land was replanted with forest trees. Twenty years later it is back to its original status – almost. It takes at least 40 years for trees to mature. This is a ray of hope.

It is clear that local residents are poor people. Efforts to preserve this one of its kind rainforest will require the kind of solutions that will help the community to find alternative means of self-sustenance, whilst teaching them about the long-term benefits to themselves if the treasure is conserved.

A visitor to the forest suggested having the Kakamega rainforest declared a National Heritage Site. Are there other viable solutions? It seems that this is a bit of a “forgotten forest”. It needs help and that rather fast! We must look for solutions for the betterment of the forest and for the community, rather than for the community at the expense of the forest or vice versa! ●



WWW.WATAMUTURTLES.COM

SEA TURTLE CONSERVATION IN WATAMU

The Watamu Turtle Watch (WTW) has come up with various activities to ensure the endangered reptiles survive.

The marine turtle nest and protection monitoring programme ensures daily patrols by volunteers to check on nesting turtles to make sure that they incubate without interference, unless their eggs have been laid in an area threatened by sea wash. In that case they are carefully relocated to a safe area.

The marine turtle net release and tagging programme encourages fishermen to release, rather than slaughter turtles that have been accidentally caught in their fishing gears. A financial incentive is provided by the WTW as compensation for fishermen who participate in the programme.

WTW has also appealed to the government to assist in stamping out the catching and illegal sale of turtles, but response, through the Fisheries department has been slow. The department has, however, outlined penalties for those caught selling turtles.

They include fines of up to \$1,200 or jail terms of not less than six months.

To care for turtles that have been attacked by predators, a rehabilitation centre was set up to care for those injured before releasing them back into the wild.

“Sea turtles act as an indicator of the health of the sea because they disperse and migrate over thousands of miles and take a long time to mature, usually 30 to 40 years,” said WTW programme coordinator, Kahindi Changawa.

“Their extinction would therefore indicate that marine life in the area has been greatly disturbed,” he added.

He explained how the leather and shell of the turtles are used in ornaments by the local people and sometimes exported. Every effort must be made to guard against poaching the sea turtles, he said, adding that local people had discovered that the sale of turtle products on the black market can be a lucrative business. ●

HELMUT EGESA WAGABI is a freelance writer based in Mombasa.

EAWLS WORKING TO SAVE SOUTH COAST TURTLES

East African Wildlife Society (EAWLS) in partnership with Fauna & Flora International (FFI) have been involved in marine conservation in South Coast Kenya since 2009. There is an increasing trend in turtle mortality in Kenya's South Coast that is attributed to incidental catch in fishers' nets as well as the alleged cultural and medicinal value of these species and limited enforcement in the expansive area. EAWLS has been undertaking turtle conservation education and awareness in Msambweni and Funzi Island and development of a community led conservation and management strategy for the turtles. There is however need to revive Turtle Conservation Groups (TCGs) and Site Committees (SCs) that would support conservation and management of these charismatic and ecologically important species in these South Coast villages. EAWLS is keen to carry out this work with a focus on protecting Green Turtles.

ENVIRONMENTAL IMPACT ASSESSMENT: ENABLER OR BARRIER TO SUSTAINABLE DEVELOPMENT IN THE KENYAN CONTEXT?



JULIUS KAMAU is the Executive Director of East African Wild Life Society.



ROBERT MAGORI is the Head of Communications and Development at the East African Wild Life Society.

A properly executed Environmental Impact Assessment (EIA) on a proposed development project can become an effective tool to promote sustainable development as it includes components that could facilitate both inter-generational and intra-generational equity.

In Kenya, the National Environment Management Authority (NEMA) is mandated by the Environmental Management and Coordination Act of 1999 (EMCA) to take into account all the likely impacts of a project to the environment before issuing an EIA licence.

The Environmental (Impact Assessment and Audit) Regulations of 2003 sets out a procedure for identifying those projects which should be subjected to EIA. It also outlines the procedures for assessing, consulting and making decisions on projects whose activities are likely to have significant impacts on the environment. The other important aim of EIAs is to ensure that the public participates in the decision-making process. This is the ideal project implementation process that the East African Wild Life Society (EAWLS) seeks

to continue to advance and advocate for to ensure responsible and sustainable development across sectors.

DAMAGE TO VITAL ECOSYSTEMS

In the most recent case, the country's largest infrastructure project in more than 100 years - the Standard Gauge Railway (SGR) - required the construction of a container terminal and marshalling yard at Port Reitz, Mombasa. The use of sea sand for backfilling was said to be ideal. However, the dredger contracted by China Road and Bridge Corporation (CRBC) started work without an EIA licence. An EIA was consequently conducted and a licence granted by NEMA, albeit two years after offshore dredging had commenced.

More importantly, the dredging sites chosen were barely a kilometre from the coastal shoreline and dangerously close to two protected marine areas - Diani-Chale and Mombasa Marine National parks.

This had the potential of turning the renowned Diani beach into a rocky field, with subsequent

Workers laying tracks of the standard gauge railway.





PHOTO BY: WWW.THEGUARDIAN.COM

THE CURRENT EXECUTION OF THE EIA PROCESS FALLS SHORT IN GUARANTEEING SUSTAINABLE DEVELOPMENT.

Sand harvesting is booming business in Kenya, fuelled by demand from the construction industry.

adverse socio-economic and ecological impacts, including loss and destruction of fisheries and other marine life ecosystems and damage to fragile, yet precious coral reefs, which sustain tourist activities such as snorkelling and boat rides.

The communities living in this area, led by the South Coast Resident's Association (SCRA) in conjunction with Kwale County Natural Resources Network (KCNRN) voiced their concerns on the dredging and subsequently took the matter to the National Environment Tribunal (NET).

The tribunal on 2 July, 2015 suspended the sand harvesting and later cancelled the EIA licence issued to CRBC. On 22 January, 2016 the Tribunal ordered NEMA to carry out a full environmental impact study.

NET ruled that the environmental assessment undertaken was hugely unsatisfactory. This put NEMA's role, the credibility of the EIA process and the quality of the EIA reports into question.

The current EIA process in Kenya falls short of guaranteeing sustainable development. With mega development projects on-going and others yet to begin, the connection between

development and natural resource management becomes even more important. So is the role of environmental assessments and audits to ensure balance in the trade-off between economic, social and ecological considerations.

EXISTING LEGAL FRAMEWORK

The Kenyan constitution guarantees citizens the right to a clean and healthy environment and makes it mandatory for the state to ensure sustainable exploitation, management and conservation of the environment and natural resources.

On the other hand, every person has a duty to cooperate with state organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources.

The principle of sustainable development has been entrenched in Article 10 2(d) of the constitution as one of the national values and principles of governance. To achieve this, balance between economic, social and environmental considerations is required to meet the needs of the present generation without compromising the ability of future generations to satisfy their own.

The spirit of the constitution and the provisions of EMCA, cannot fully be guaranteed under the current state of affairs with regard to the management and coordination of the EIA process, the quality of reports and the prevailing

low level of participation by the public.

These challenges need to be addressed if the assessments are to become effective decision-making tools.

DRAWBACKS TO MEETING EIA EXPECTATIONS

Experts looked at the EIA processes in two other large-scale projects: the Nairobi-Thika-Highway Improvement Project (NTHIP); and the Lamu Port and Southern Sudan-Ethiopia Transport Corridor (LAPSSET) and came to the conclusion that Kenya faces a bleak future on environmental sustainability unless better assessments are carried out before projects are implemented.

EIAs are mandatory in Kenya, but as shown in the cases of offshore sand harvesting and the construction of the Standard Gauge Railway, they lack merit and often fail to meet expectations.

EIAs are simply viewed as legal barriers to project implementation or a checkbox process rather than an enabling decision-making tool to advance environmental conservation.

In fact, available literature shows that few projects, especially the larger ones, are rejected or required to provide additional information. The current setup sees the project proponent contracting an EIA expert to undertake the assessment.

The EIA experts therefore become employees, albeit temporarily, of project proponents, and in many instances the objectivity of assessments is compromised. A project's adverse impacts are often down-played, inadequate project alternatives assessments, inadequate mitigation measures proposed and public participation either ignored or compromised.

NEED FOR ENHANCED CAPACITY

While there are a number of EIA lead experts or firms with the required competence to undertake and produce high quality reports, the reality is that the majority of the reports available are unsatisfactory. More often than not, environmental management plans are not comprehensive and do not cover the entire range of environmental aspects identified nor do they stipulate adequate mitigation measures for the identified issues.

On the flip-side, NEMA has somewhat inadequate capacity to comprehensively review EIA reports. Limited funding means the agency is unable to enhance its internal capacity, engage external experts or even monitor the implementation of the environmental management plans.

Public participation that is mandatory is often inadequate. It is essential that the public is well

Road network expansion remains a key development agenda not only in Kenya but East Africa.



informed and sensitized to effectively participate in assessments. Another technical inadequacy with the current EIA process is that it is one-sided. EIAs only assess the potential impacts of a project to the environment, but do not evaluate the potential impacts of the environment to the project, such as the implications of climate change. This compromises EIA as an able tool for sustainable development.

For instance, several major infrastructure projects such as roads and irrigation schemes that have sufficiently been subjected to EIAs have not been able to withstand extreme weather events, especially floods. This in essence has resulted in loss of life and property. It is therefore imperative that EIAs integrate climate change as a consideration in the assessments.

Going forward there is need to strengthen the enforcement of the EIA law and regulations that institutionalize issues such as standard of reporting and the process to be followed in the preparation, approval of environmental assessments and monitoring of the implementation of environmental management plans.

In addition, more resources should be made available to NEMA to enable the agency to intervene in the EIA process and carry out independent studies. The capacity of the EIA practitioners also need to be enhanced to enable them to adequately deal with ever changing environmental dynamics.

More importantly, there is an urgent need to strengthen public participation in the EIA process. This can be done through ensuring appropriate awareness of laws pertaining to EIA and environmental issues, as well as proper information dissemination, document sharing and consultation on how people's concerns are incorporated in the assessment reports.●

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**Workers at the site
of a surface mine.**



IN NATURE CAN YOU PROVE WHAT YOU HEAR IS WHAT'S REALLY THERE?



BRIAN FINCH is the author of the sounds component of the recent *Birds of East Africa* Application available on the iTunes Library as well as a co-author of the field-guide, also co-author of "*Birds of the Horn of Africa*," and "*Birds of New Guinea*" as well as many smaller publications including the recent updated checklist for the *Birds of Nairobi National Park*.

The Paddock with "the tree" as the focal centre of the paddock universe. (The bird circled is a bat hawk.)

THE TREE

The vegetation currently in the Paddock is growing rampant, swathes of lush grass and the first of the wet-season flowers. This is not surprising as with a normal annual average of 32 inches of rain, as at mid-May we had already had 42 inches for this year. This is wonderful for the vegetation, and makes a difference (eventually) to the artesian water table which has been low the past few years not just because of below average rainfall, but an increase in the number of people that were now tapping into the supply.

But the weather has not just brought good; there has been a major casualty. The entire centre of the paddocks universe has come to an end, and with the weakening of the ground, shallow rooted, almost completely dead with the addition of someone living right underneath it, it was decided that "The Tree" was too dangerous

to leave standing, and admittedly in the not too distant future it would have fallen with potentially disastrous results.

This was the major perch for most species in the paddock, it's lofty dead branches made it very easy to see the birds, and it was a rest stop for so many things flying over that will not make landfall now, just whistle overhead and not be recorded. Being an open situation it was easy to get the record shots, especially of the less common species for Nairobi (see images), now that opportunity doesn't exist.

The birds and almost equally myself, will have to adapt without it. There's still a good variety but the magnetic pull of the unusual species is no longer here. Its absence makes it obvious that on the planet today every tree counts, and one less is not just a loss, it is a great loss.



Special visitors photographed in "the tree"



PHOTOS BY: GOOGLE IMAGES



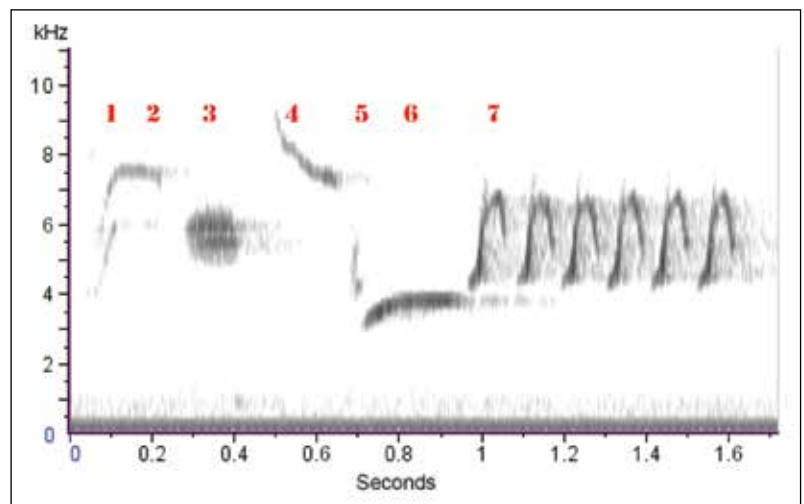
TOP: Left to Right: Bat Hawk, Broad-billed Roller, Cut-throat Finch, Eurasian Hoopoe (male - race wahbeli)
BELOW: Left to Right: Grey-capped Social-Weaver, Olive Pigeon, Semi-collared Flycatcher, Lesser Grey Shrike

DECEIVING SONOGRAMS (AUDIAL SPECTROGRAMS)

In the October 2015 issue of Swara, I made special mention of the obsessive mimetic abilities of Ruppell's Robin-Chats. The way to portray wildlife sounds into a two dimensional image is through the use of Sonograms also known as Audio Spectrograms. It is a sophisticated graph that is the result of a digital program that measures, interprets and translates sound to energy output covering a spectrum of frequency/pitch along the vertical axis, against time along the horizontal axis.

The result is very detailed, and experts familiar with these can almost hear the sound that was produced now relegated to black-and-white print. In birds it is now possible to compare the physical representation in the subtle variations of similar sounding species that may not be discernible to the human ear. This is very helpful in providing the specific identification of species that may be visually similar and also have similar vocalisations.

Thankfully most similar looking species do not have similar calls, but those that do sound similar



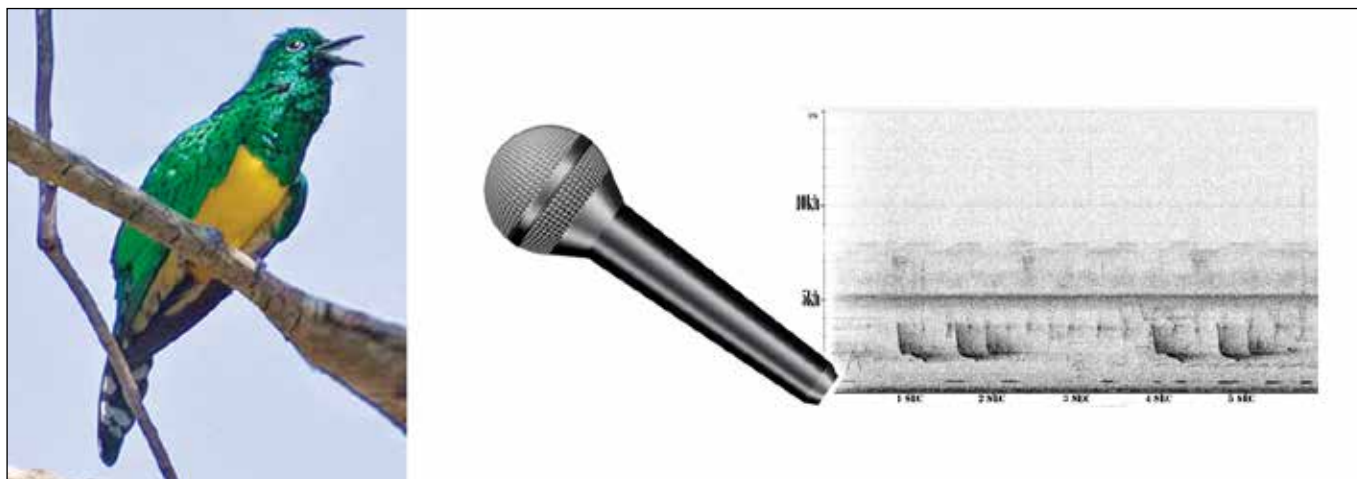
A Sonogram guide

show different energy output alongside different frequencies, and the incidence of the individual notes can now be shown to be different when seen against the time scale.

Most species sonograms are quite different from each other, but the very visually similar forms that are being found now and being described as new species to science are known as "Cryptic Species," in that their presence has been overlooked because they are so very alike a more familiar form.

The Nairobi Pipit in Nairobi National Park (and has visited The Paddock), is an example of a cryptic species, visually quite similar to Long-billed

THE WAY TO PORTRAY WILDLIFE SOUNDS INTO A TWO DIMENSIONAL IMAGE IS THROUGH THE USE OF SONOGRAMS ALSO KNOWN AS AUDIO SPECTROGRAMS.



Recording and sonograms made from African Emerald Cuckoo (top) in the canopy and the mimic Ruppell's Robin-Chat (below) near the ground (the sonograms are identical).

Pipit, but differing in a number of subtleties which includes DNA, structure and constant differences in their calls as seen on their sonograms. Its existence was first announced to the world in Swara No.25 of 2002.

There is a pitfall to accepting all on a sonogram as gospel, and it relates in part back to our friend the Ruppell's Robin-Chat. This Robin-Chat is a mimic, it seems to be able to imitate with perfect precision the calls of virtually any small bird it hears, but has also mastered alarms and sirens as well. Not only does it fool the human ear into thinking it is the call of another species, but to take it a step further, an analysis on a sonogram shows that it manages to fool these as well.

The imitation in all its complexities at the different frequencies, energy output and spacing is as good as perfect, and it is impossible to identify if the sound heard is the mimic or the model (species being mimicked), and the sonogram equally cannot either.

No one has explained why birds mimic calls of others conclusively, but if these mimics can break down the structure of another birds call into all the detailed components that make up the sound this suggests to me that they are hearing the call at a far more complex and sophisticated level, than our own hearing will allow.

To give you an idea of how detailed this is; a Sonogram is often broken down to readings at one/thousandth of a second (millisecond), so there are a thousand readings per second, each giving the energy output covering the frequency spectrum, comparing the variations involved is like comparing the fine details of a sonogram, and likening a fingerprint to a prehistoric cave painting!

We are not through with the marvel of the sonogram yet - as each frequency is detected in that millisecond it produces a dot, were it just a dot then one character of a bird song would be missing, and that is the variations in volume. Birds do not produce their songs all at the same level of output, each note varies some soft, and some much louder. The sonogram identifies the volume of each of these points along the frequency graph, and the dot varies from pale grey for soft output to nearly black for the loudest notes and all shades in between.

But most astoundingly some mimics hear, analyse and reproduce exact reproductions from their syrinx and with all this minutiae of detail that the sonogram handles, it still cannot show it is not the original singer but a copycat! That's how good the accomplished mimics like Robin-Chats are.

XENOPUS – A STRANGE FROG COMETH

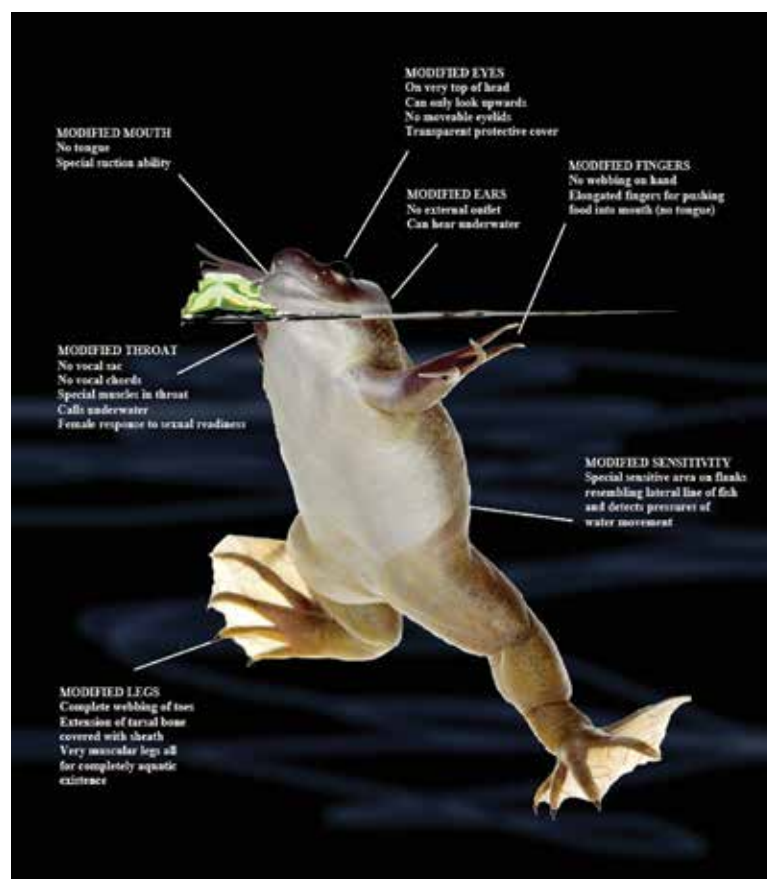
As we have no standing water our frog fauna is limited to Guttural Toads, but the recent heavy rains filled an old tank that runs off from the cowshed. A couple of weeks ago I thought I would scan the vegetation around the edge for any dragonflies that might be attracted, but there was not a single one.

There was a sudden movement and on focussing my binoculars on the spot was amazed to see a frog, with eyes set right on the top side of its head, and full webbing on the feet. It was an oily patternless not very attractive frog immediately recognisable as a *Xenopus* (*victorinus*) or (Mwanza) Clawed Frog, the most aquatic of all frogs spending virtually its entire life in water for which it has numerous special adaptations.

Sadly for the genus they are often the victims of dissection by budding biologists, to the point that they are the most used vertebrate for investigative biology and medical research at so many levels. However at some point it must somehow have arrived overland, as we are quite a way from the nearest dam.

There are so many interesting features about these frogs. Firstly they are African representatives of an extremely small family shared only with South America, Pipidae. (Currently Africa 28, S.Am 4 species). The group is called “Tongueless Frogs,” and they are the only frogs to lack this organ. Without its assistance they have to engulf and swallow their food

OUT OF WATER THEY ARE INCAPABLE OF HOPPING AND CAN ONLY CRAWL. IN CAPTIVITY XENOPUS HAVE BEEN KNOWN TO LIVE FOR FIFTEEN YEARS!



Special adaptation of african clawed frogs – xenopus

and use the long unwebbed fingers of the front legs to assist in this.

They find their food with acute sense of smell underwater, and an area along the flanks like a fish's lateral line, which is sensitive to changes in water movement and pressure, and helps in catching unseen food in the silty water bottoms.

Xenopus have the fullest webbing of any frog showing their essentially aquatic existence, and have strange claws on their three hind toes, which is an extension of the skeleton exiting the body, but having a strange sheath like a claw, which gives this group its common name – Clawed Frogs.

With a unique structure, although there are no external ears like all other frogs, they can hear underwater, and the males only call underwater although unlike other frogs they completely lack a vocal sac or vocal chords, and use rapid muscle retractions in their throat to produce a clicking sound.

The females then answer back with one of two different calls, one acceptance and the other rejection! Instead of having the eyes near the top of the head as in other frogs, they are located on top of the head and strangely can only look upwards, this means it can have the body completely submerged with the eyes above the water but it actually has no moveable eyelids.

Uniquely they can change their colour to match the environment they are in. Individuals that don't leave, can survive the drying of the ponds by cocooning themselves in mud and waiting for the next wet period.

Out of water they are incapable of hopping and can only crawl. In captivity *Xenopus* have been known to live for fifteen years!

In the 1940s and 1950s, *Xenopus* were used as a human pregnancy testing kit! The urine from potentially pregnant women was injected into female frogs and only if a woman was pregnant would this cause the frog itself to ovulate. Once a frog had served its purpose, as there could only be one test on one frog, the animal was released, which is why *Xenopus* are now widespread as feral introductions in the United States and elsewhere!

It was *Xenopus* that was the first ever cloned vertebrate, not Dolly the sheep.

In fact this humble but certainly bizarre frog has been subject to research on human health and genetics for a long time. Had it not been found to have all the properties it has, by now humans might have become extinct! (Google... “*Xenopus* Wikipedia” and prepare to be stunned).

As a group, the numerous species of frogs have individual vocalisations. Many sympatric (co-occurring) species are similar to each other, but are co-existing species with different calls. Many recent species existences have been discovered thanks initially to their differences in calls, and where was this first learnt ... Sonograms! ●

OSERENGONI WILDLIFE SANCTUARY



JOHN NYAGA is the editor of Swara Magazine.

Past Lake Naivasha in Kenya's Great Rift Valley, beyond the flower farms that are the mainstay of the area's economy, lies the Oserengoni Wildlife Sanctuary (OWS), a private conservancy with a wide range of flora and fauna - and two lodges that avail world-class comfort in tranquil surroundings.

Ringed by a breathtaking view of the undulating Mau Escarpment in the horizon to the west and bordered by the Hells Gate National Park to the east, Oserengoni, previously a cattle range and wheat farm, measures roughly 12,000 acres.

"Naivasha is a great alternative to the Masai Mara," says Suzanne Gathitu, Sales and Marketing Manager of the two lodges -

Chui Lodge, which comprises eight cottages, and Kiangazi House, which has seven rooms, including a couple of larger ones for visitors who wish bring their families along. "People should discover that Naivasha is actually home to a variety of species of wildlife rarely seen elsewhere," explains Ms. Gathitu.

The sanctuary was established in 1995 by Dutchman Hans Zwager, his wife June and their son Peter, aiming to conserve biodiversity, attract visitors and become a centre for sustainable development. The Zwagers had already made their home (the Djinn Palace) at Oserian, on the shores of Lake Naivasha, where they became the largest flower growers in Kenya.

The animal population in Oserengoni was

One of the cottages at Chui Lodge





initially small, but has risen over the years, a factor Sanctuary Manager, John Ndegwa, attributes to suitable habitat management and effective security and protection measures.

“From a land use practice that was intolerant to wildlife conservation, OWS has made progressive strides towards effecting a complete transformation from cattle husbandry and wheat farming to conservation,” says Mr. Ndegwa.

There is an abundance of birds. The Grey-helmeted Shrikes finds a safe haven among stacks of *leleshwa* (camphor bush), while the mix of vultures do not lack carcasses to feed on in the open glades. Cheetahs and leopards are a common sighting, while “George” the lion has seemingly found his way back to what must have been his ancestral home.

In a bid to enrich the genetic pool and broaden species diversity, several animal species were brought into the sanctuary in the late 1990s. They included the White rhino, Topi, Grevy’s zebra, Wildbeeste, Thompson gazelle and Waterbucks. (The rhinos were subsequently translocated to other sanctuaries after several poaching incidents.)

At the time, wildlife were being displaced from the surrounding areas as a result of land use practices that were oblivious to conservation. Poaching, charcoal making and logging resulted in habitat fragmentation as well as blockage of traditional dry season dispersal grounds, further contributing to the confinement of the animals to the only remaining safe areas - including Oserengoni wildlife sanctuary.



PHOTOS BY: OSERENGONI WILDLIFE SANCTUARY

TOP: Comfortable king size beds.

**LEFT PAGE
TOP: Buffalo graze at Oserengoni Wildlife Sanctuary.**

MIDDLE: Warthogs abound.

BELOW: One can relax by the poolside at Kiangazi House.

The sanctuary is ringed with a 40-kilometre fence to keep the animals in and people out, thus minimizing the potential for conflict between the two. Watering holes dot the sanctuary, ensuring that the wildlife do not go thirsty.

The conservancy does not seek to isolate itself from the local community. It has set up and maintains amenities for the community, including schools, health centres and water projects. “We need the community to protect the conservancy for us,” says Ms. Gathitu.

Oserengoni’s true conservation success lies in its unique ability to strike a balance between sustainable development, through its various commercial enterprises, and maintaining a fully-fledged conservation entity, according to Mr. Ndegwa.

There have been challenges. The “success” has resulted in the population of some species outstripping the conservancy’s ecological carrying capacity. With the country’s policy on wildlife population management yet to be finalized, the conservancy is left to struggle with “excess” animals that could be accommodated in other areas of the country where numbers have been in decline.

“A more practical population management policy would go a long way in offsetting the cost and loss incurred through infrastructural damage,

ecological degradation as well as human-wildlife conflict,” says Mr. Ndegwa.

“Individual conservation efforts should not be allowed to become a burden to the land owners especially in a country where well over half of the wildlife population exist outside protected areas,” he adds.

Back at Chui Lodge, self-taught chef Richard Langat and his staff have prepared a meal of steamed tilapia, spiced up with various herbs and vegetables, all grown in the Oserian horticultural farms nearby. Langat’s roast pumpkin soup is a culinary delight that must be tasted. He joined the conservancy 17 year ago as a construction labourer. He was later moved to the kitchen where he learned the knack of gourmet cooking as he did the dishes.

Meals or drinks can be had outside the dining room, lounge and bar, depending on the weather.

Oserengoni offers various activities for its visitors, notably game drives or walks - in the company of knowledgeable guides - that can end with a refreshing sundowner by a bonfire in the wild. One can venture to the shores of the nearby Lake Oloidien, frequented by pelicans. Boat rides can also be organised on Lake Naivasha for a rendezvous with hippos, pelicans and fish eagles.

A visit to the adjacent Hell’s Gate National Park can also be organized from Oserengoni. ●

MOUNTAIN DUTY



BECKY SUMMERS
is Communications
Officer at Mount
Kenya Trust and
works closely with
the ranger teams on
Mount Kenya.

Edwin Kinyanjui and Charles Nyaga are members of the Mount Kenya Trust Joint Wildlife Protection Team (JWPT), a mobile unit of anti-poaching rangers, who provide critical ground cover against poaching and biodiversity loss in the Mount Kenya National Park and Reserve.

A branch snaps through the thick undergrowth as head ranger Edwin Kinyanjui turns to ensure that his men are lying low and are out of sight. Being leader of the Joint Wildlife Protection Team (JWPT) is not a job for the faint-hearted. In Edwin's line of work, danger could lurk around the next corner - an enraged female elephant, a wire snare or a pack of armed poachers with dogs.

The Mount Kenya Trust rangers protect the huge forested expanse around Africa's second highest mountain, Mount Kenya. Towering almost 5,200 metres high, the peak is nestled in lush indigenous forest and moorlands teeming with wildlife.

The area is one of the largest remaining block of forests in Kenya and a key water tower for the entire country. Both the Tana and the Ewaso Nyi'ro river basins are fed from its heights, with the vast forest acting as a huge sponge, helping to retain water and prevent soil erosion, at the same time slowly

releasing water into rivers for those downstream. The peak delivers up to 65 per cent of Kenya's hydroelectric power. It is also a biodiversity hotspot, listed as a World Heritage Site by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1997.

The abundant ecological richness invites the temptation to exploit. Illegal logging, grazing, charcoal production, honey harvesting, poaching and marijuana growing are some of the vices that bedevil Mt. Kenya Forest. Illegal agriculture and fires are the other threats.

RANGER WATCH

"We conduct most of our patrols on foot in different regions of the mountain," says Charles Nyaga, one of the JWPT team members. "I have seen progress as well as destruction caused by human activity."

The team's daily activities include untangling snares, wildlife rescue and arresting poachers and illegal loggers. Started in 2009, JWPT comprises four scouts who are accompanied by two armed rangers of the Kenya Wildlife Service (KWS). They are a mobile unit able to cover large parts of the Reserve. A Toyota Land Cruiser drops off at designated starting points and picks them up at a patrol



THE MOUNT KENYA TRUST RANGERS PROTECT THE HUGE FORESTED EXPANSE AROUND AFRICA'S SECOND HIGHEST MOUNTAIN, MOUNT KENYA.



TOP LEFT: A ranger stands at the peak of Mount Kenya.

TOP RIGHT: Rangers arrest illegal loggers.

BOTTOM LEFT: Rangers remove a poachers' snare.

BELOW RIGHT: Elephants in the Mount Kenya forest.

end point. "There are no paths in the forests, often we will use animal paths as these are the ones the poachers will use too. Most of the time when we are walking we try to be very quiet so that you will be able to hear any noise or activity going on in the forest such as dogs barking, somebody cutting or maybe a buffalo trembling," explains Kinyanjui. "We find snares, bush meat fireplaces, poachers' dens and even sticks with blood (...) where they roasted the pieces of meat over the fire."

The work of a mobile team can be frustrating. The group must be constantly moving in response to urgent threats across the vast region, leaving behind areas they have secured. Illegal activities can resume as soon as they move on to another area.

"It's like a game of cat and mouse," says Kinyanjui. "We remove snares and the poachers will shift to another area. We take coordinates for recording so the next time we are passing by we can know the location of certain activities."

This means days spent trudging through mud and thick undergrowth and living in tents.

"Despite the challenges I face on my line of duty, I feel motivated each time we arrest and apprehend poachers or illegal loggers or when I remove snares, knowing I have saved an animal," says Nyaga. "I am passionate about

conserving the environment because I feel it's my duty to protect the reserve for us and the future generations."

The job is hard and dangerous. Threats are real - poachers armed with spears, machetes or poisoned arrows. "Some of the snares laid out are crude with spikes when you step on them. Others hang big logs on top of trees that will fall on you or deep traps dug into the earth," says Kinyanjui.

Nyaga agrees: "I once had a most spine chilling event when during a patrol I fell into an elephant pit trap and almost broke my legs."

Night-time raids to catch suspects can run into the early hours of the morning. At times, the team gets back to the camp past midnight. "Many loggers use the cover of darkness to mill, so we will then lay an ambush around 2 a.m.," says Kinyanjui. With such tough conditions and constant danger, one could wonder why these men are out there risking their lives.

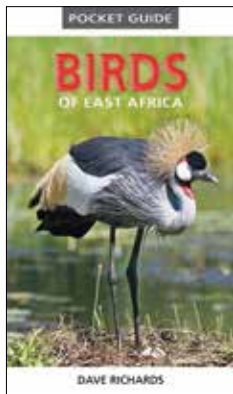
"My family ask me - 'Do you really want to be killed, to die because of your work for elephants?' I tell them that it doesn't matter. We have to be champions of conservation to ensure the future generations will be able to appreciate this precious forest rivers and animals as a whole. If we continue to lose these animals and eliminate one species after the next, there will be no balance in the natural world." ●

Grey crowned crane in the
Ngorongoro Crater.



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PHOTO BY: SHAZAD KASMANI



BIRDS OF EAST AFRICA - POCKET GUIDE

By Dave Richards

Published by Struik Nature

South African publishers, Struik, are clearly making a pitch for a wider market, and joining their Mammals of East Africa and the Insects, we now have the Birds. Author Dave Richards is ideally suited to produce this little book (having also just co-authored Struik's 100 Common Bird Calls in East Africa). The book illustrates nearly 300 of East Africa's 1400 or so species

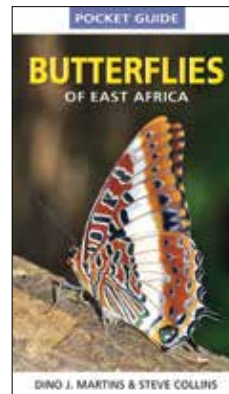
and as its introduction notes, "selecting birds for inclusion - was a particularly difficult task, and preference was given to those that occur in areas visited by tourists." This was inevitably a subjective exercise. The majority of the birds are found throughout East Africa and the book's spread clearly recognises that most of its users will be visitors to Kenya.

There are descriptions of two birds per narrow page, with each containing at least one photograph and a distribution map. Sometimes there are two photographs; but the second often adds very little, and the most helpful combination is when the text and second photograph slip in details of an additional species - like the Glossy Ibis inset in the hadada Ibis description and the Red-faced Cisticola with the Singing.

The target market must be residents and visitors with an interest in birds, which falls short of prompting them to invest in or carry around one of the larger, comprehensive handbooks. There will doubtless be many of these. It is inexpensive enough for tour operators to give out copies to their clients, and portable enough to live in any resident's car for daily reference.

There are some really good spreads, covering superficially similar species, which should benefit even those who reckon their knowledge needs no enhancement from a book such as this. The coverage of swallows is excellent as is that of the hornbills and plovers. And it certainly helps me to be able to glance at both our pelicans on the same page or to find Great White and Yellow-billed Egrets together.

Reviewed by Rupert Watson



BUTTERFLIES OF EAST AFRICA - POCKET GUIDE

By Dino J. Martins and Steve Collins

Published by Struik Nature

This is the latest in Struik publications concerned with East Africa. Authored by the two major entomologists of the region, this is a very useful pocket-sized publication covering 247 of the mainly commoner species. The first ten pages are dedicated to brief outlines covering structure, life history, vegetation types, and how to use this book. These are nicely laid out and informative.

In the most important part of the book covering the species, we are treated to a fine selection of images, the majority are of individuals taken in a natural state, but there are 171 images of prepared specimens, most images are by the authors, but 42 per cent have been outsourced with the collaboration of many photographers. Each species has informative text and accompanying map to show regional distribution.

Although titled Butterflies of East Africa, of the 247 species representing roughly 10 per cent of the total species found in East Africa, 246 are recorded in Kenya, and the African Giant Swallowtail of south-western Uganda being the sole exception. However the butterflies certainly cross the borders and occur in Kenya's neighbours, but it would have been nice to have seen a fairer representation for other countries given the title.

Although the image for Common Grass Yellow is in fact a Small Grass Yellow (not in this book yet one of the most common species over all of the region) the images appear correctly labelled. The maps however often do not always match the descriptions given in the text, and at least one example (Large Striped and Small Striped Swordtails) has the species reversed. There are parts of range omitted, and one case of a Kenyan endemic being in Tanzania, but otherwise a useful guideline.

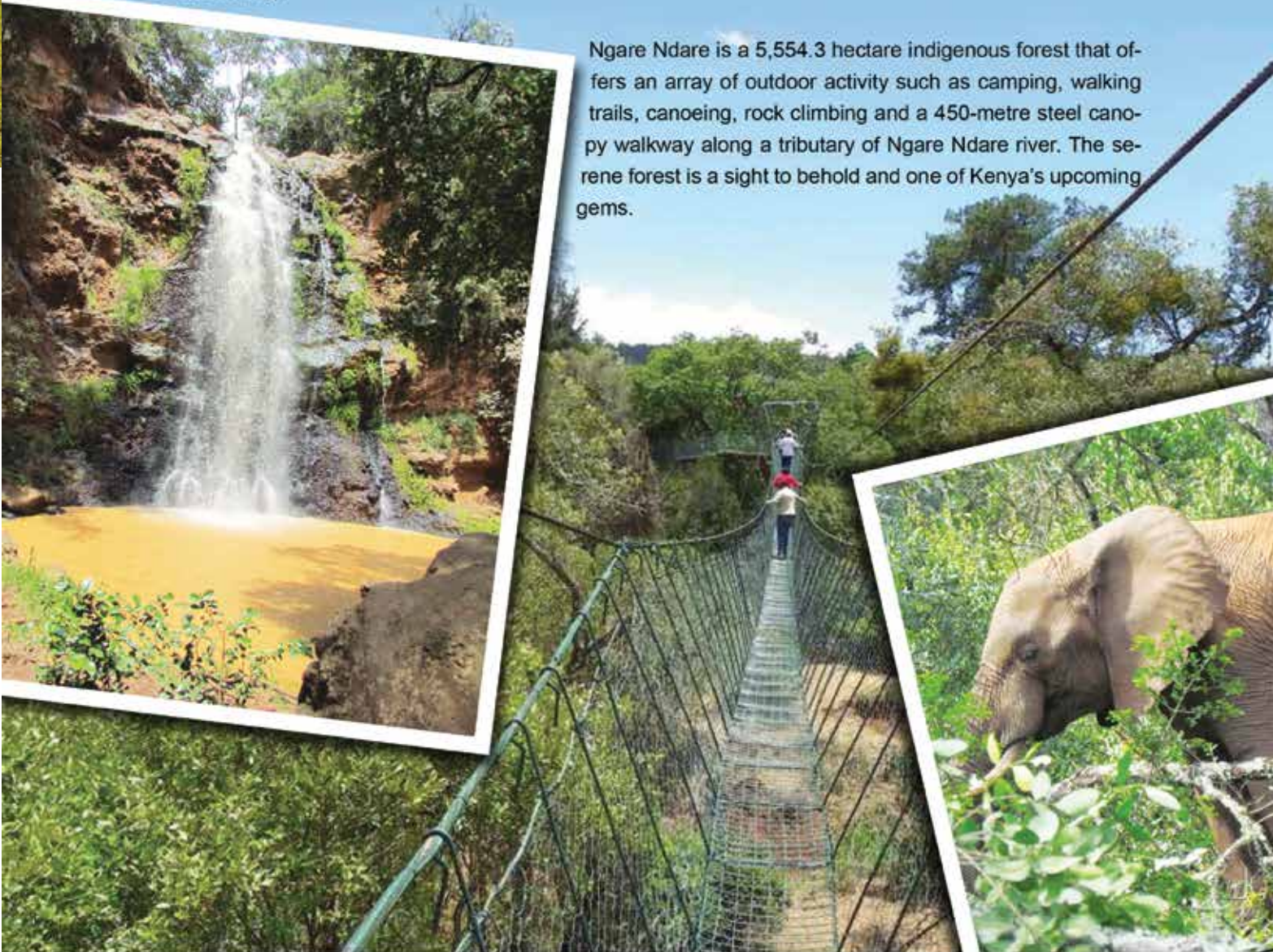
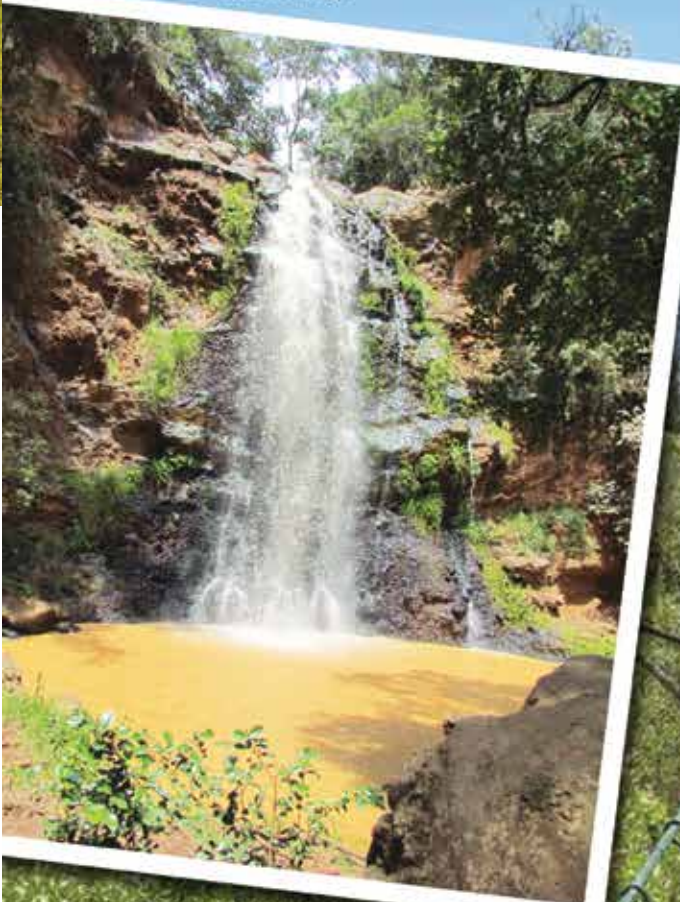
For someone who is interested in knowing about the butterflies of the region, for the price and the convenience of size, this is definitely a must have.

Reviewed by Brian W Finch

Ngare Ndare Forest

Ngare Ndare Forest is a flourishing indigenous forest at the foothills of Mt. Kenya. Sapphire pools glisten at the bottom of waterfalls and 200 year old trees stretch into the canopy supporting a rich variety of bird and animal life. The forest forms an important corridor for elephants and other wildlife moving from Mt. Kenya forest to Il Ngwesi, Mukogodo and other sections of Kenya's northern rangelands that includes the Lew Conservancy.

Ngare Ndare is a 5,554.3 hectare indigenous forest that offers an array of outdoor activity such as camping, walking trails, canoeing, rock climbing and a 450-metre steel canopy walkway along a tributary of Ngare Ndare river. The serene forest is a sight to behold and one of Kenya's upcoming gems.



For more information contact:
Kenya Forest Service
Karura, Off Kiambu Road
P.O. Box 30513 – 00100 Nairobi, Kenya.
Tel: +254 20 2020285
Email: info@kenyaforestservice.org
or ecotourism@kenyaforestservice.org

Ngare Ndare Forest Trust
P.O Box 1704 – 60200 Meru
Tel: +254 722 886 456,
+254 700 412 532
Info@ngarendare.org
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