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Invasion of ranches by herders in Laikipia: drought, land or politics?



The Laikipia ecosystem has the second highest concentration of wildlife in Kenya and more endangered wildlife species than any other region. It is an area of great conservation value and its fate is largely in the hands of its residents.

The conservancies in Laikipia's varied and interconnected habitats are home to some of the most pristine natural resources, including wildlife, forests and wetlands. They showcase successful conservation efforts in Kenya, having provided ideal conditions for wildlife species to thrive even as national parks and reserves come under increasing pressure.

Unfortunately, recurring droughts, climate change and land disputes are undermining conservation efforts in Laikipia. In recent months, an estimated 15,000 nomadic herders, some of them armed, and more than 130,000 livestock have encroached on private conservancies, ranches and sanctuaries in the county with devastating consequences.

Such acts of lawlessness must be dealt with according to the laws of the country to ensure success stories in conservation and peaceful co-existence of residents are not sabotaged. The East

African Wild Life Society (EAWLS) has consistently condemned the invasions and urged the Ministries of Interior and Environment to take action to ensure peaceful co-existence of residents and respect for the rule of law.

The invasions have led to loss of human life and property and the killing and disturbance of wildlife. People have been displaced and schools closed. The incursions could have far-reaching negative impacts on wildlife conservation in the area.

Initially, the invasions were attributed to drought, grievances related to land ownership issues and politics. But the violence suggests other reasons for the unrest – land disputes projected in political overtones. The instigators are, perhaps, seeking to gain political capital by portraying themselves as champions of the land rights of “marginalized” indigenous communities.

The murder of Tristan Voorspuy in March by assailants thought to be herders demonstrates how fraught the issue of land ownership in the area has become. Mr. Voorspuy was a long-standing friend and member of EAWLS as an individual and, through Sosian Lodge and Offbeat Safaris Limited, a corporate member since 1995. The Society and indeed the conservation fraternity has lost a dedicated colleague.

Authorities seem to have dithered when the chaos first reared its ugly head late last year, even as large groups of armed herders with their tens of thousands of livestock stormed private conservancies with impunity. “Madam Minister, we wonder what the law is all about?,” Joseph Kibe, EAWLS chairman posed to Prof. Judi Wakhungu, Cabinet Secretary, Ministry of Environment and Natural Resources, referencing the invasions at the event to mark the Society's 60th anniversary on 7 February. In her response, the Cabinet Secretary admitted that Kenya's

economic growth is putting pressure on natural resources and the environment. She stressed the need to work proactively with organisations such as EAWLS to look for solutions.

But it is apparent that the invasions have little to do with an expanding economy. They appear to be driven by land and political issues that require a multi-stakeholder engagement to find a solution, while not compromising the rule of law. Wildlife conservation can not thrive let alone survive in a state of anarchy and violence. The relevant national government ministries and Laikipia's county administration must act with resolve to restore law and order before a significant part of the country's economy is annihilated through murder, arson and the decimation of wildlife.

Indeed, the underlying issues of land ownership and leases is not limited to Laikipia or private ranches and conservancies. Other areas such as private tea growing estates in western Kenya grapple with similar issues. Strife in Baringo and Isiolo also poses a threat to the conservation of natural resources.

I am in agreement with one of EAWLS members, Peter Low, who points out that: “It is difficult to perceive a short-term solution to the Laikipia invasions other than for Government, through the forces of law and order, to take whatever steps are necessary to disarm the invaders.

“The emergency incentive for compliance could be an underwritten market opportunity to allow for rapid and immediate destocking, and famine relief distribution. Leaders may well argue that de-stocking is depriving invaders of their livelihood. Converting livestock into money does not mean loss of livelihood whereas allowing livestock to die does.”●

Julis Kamau
Executive Director

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Dear Editor,

Firstly my compliments on an excellent 4th edition in 2016 (October-December) with the articles on Kitili Mbathi and the NEMA regulations. Every article is noteworthy in itself.

My correspondence to you focusses on a visit made by myself and 25 members of the Mt. Kenya branch of the Kenya Horticultural Society (KHS) to the Kakamega Forest in January this year. We stayed four days at the Rondo Retreat Centre, an excellent facility from which to explore the southern portion of this forest, which we did with guides to take note of the flora and fauna of this unique forest.

Firstly we were very concerned at the lack of proper controls regarding access into the forest, the constant removal of timber, the burning of wood to make charcoal along the banks of the Yala river and the degradation of the perimeter.

Add to these concerns the volume of traffic coursing down the road between Kakamega and Chepsono with the resulting heavy dust pollution, and discussion of plans to tarmac this dust road to facilitate more heavy traffic directly through this highly sensitive forest, puts this forest at the highest risk of being further damaged.

The simple fact that four timber yards have opened up only 2 kilometres from the centre of this forest and 100 metres from a KFS [Kenya Forest Service] check point, reinforces the impression that the management of this southern section of the forest is obviously sadly absent.

Despite being told that permits are required to enter this forest, not one

single KFS officer was seen during these 4 days and no checks were apparently being carried out on the passage of vehicles through this wonderful gem of nature.

My appeal is to your excellent body of members and professionals who make it their passion to protect such threatened assets to please advise us of the official situation regarding this forest and the initiatives in place to secure this highly-threatened bio-reserve. We look forward to perhaps an article on this subject in the next edition. ●

Yours Sincerely,

Alan M. Paul
Chairman
Eco Fuels Kenya Ltd
Box 1664 - 10400 Nanyuki

Dear Editor,

Once again thank you for a very interesting issue of Swara (October-December 2016), sadly with some very heart-breaking stories!

I read with interest the Director's Letter "Pseudo Public Participation in EIA Process" and concur with him. I am Chairperson of the South Coast Residents' Association and we have gone through endless Environmental Impact Assessments (EIAs).

We are lucky to have on our committee a very honest, EIA-licensed committee member, which does make things easier for us. Unfortunately many companies, corporate and private, use lead EIA consultants who naturally look after the interests of their clients and end up doing shoddy EIAs.

Many of these are copy and paste jobs and end up being quite senseless. A couple of examples of this is when we were fighting to save Mrima Hill in the South Coast of Kenya where the EIA stated that there were no trees on the hill and yet Mrima Hill Forest Reserve was gazetted in 1961, and made a nature reserve under the Forest Act in the early 1980s.

Mrima Hill is also a Kaya (sacred forest), recognized by the site's gazettelement as Mrima Hill Sacred Grove National Museum in 1992. Again they stated that there were mangroves at the top of the hill. Mangroves grow in sea water! The whole EIA was flawed in this manner.

When fighting the sand dredger in the south coast, the EIA actually showed a photo of a bunch of people, well dressed, standing on the beach studying the underwater impact! I could write a book on all the flaws and shoddy EIAs we have come across.

Our recommendation is that all EIA's must be gone through, paragraph by paragraph and commented on. Moreover, people should not be afraid to take on NEMA (National Environment Management Authority), companies involved or whoever is behind a project.

It is a citizen's constitutional right to contest a shoddy EIA. If everybody did that we would have a lot less destruction of our environment and a lot less illegality. ●

Luciana Parazzi
South Coast Residents'
Association, Kenya

Dear Editor,

I have just finished reading your issue for October to December 2016 and with one or two exceptions, all articles seemed to deal with the problems that humans are causing wildlife and the negative effect that they have on conservation.

I have visited Kenya and Africa many, many times and have noticed the deterioration everywhere! I visited Lake Naivasha in 1976 for a week, but I would never dream to go back there, as I would be so disappointed.

The human race is making an appalling mess of its world, despite years of warnings, and if things are not changed radically the result could be disastrous! You only have to read 5

or 6 issues of SWARA and you have a complete picture of what the problems are! I use the word "problems," but what I really mean is problem. There are already too many people on this planet and the population growth rate is not slowing.

We humans know all, are so intelligent and can easily find solutions to any problem, but the way we live is not sustainable! We raise the question of "carrying capacity" of animal species in parks and decide what limits are to be made and how number reductions can be achieved!

What if for example, the lemurs and sifakas were consulted on the sustainable numbers of humans in Madagascar, an already overcrowded

place! Their response would probably be that the sustainable number of humans was reached in the 1970s or 80s!

You could probably say that about all countries, cities, towns and villages, so why do we so selfishly keep procreating with total disregard to the consequences. We then rather haughtily discuss limiting animal numbers to reduce or avoid conflicts with wildlife!

Unfortunately, I think we have got it the wrong way! ●

Yours faithfully,

**Peter Thomas
France**



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Kenya Airways joins UN campaign to help end wildlife crime

Kenya Airways, joined forces with UN Environment on World Wildlife Day to help put an end to the illicit international trade in wildlife driving myriad species to the brink of extinction. Kenya Airways said it is partnering with UN Environment to effectively cut off one of the main transport routes used by criminals to smuggle wildlife, dead or alive, from Africa to the Middle East and East Asia. The partnership comes in the wake of a poaching crisis across Africa that is wreaking havoc on creatures great and small, from elephants and rhinos to pangolins and African Gray Parrots.



Kenya's Energy Regulator Allows Coal-Fueled Power Plant in Lamu

Kenya's Energy Regulatory Commission (ERC) has approved the construction of the country's first coal-fueled power plant near the Indian Ocean coastal town of Lamu, a UNESCO World Heritage site, according to media reports. The decision by the ERC paves the way for Amu Power Company Limited, a consortium that includes Centum Investments, to be granted a power generation licence that had been withheld since last year pending a review of objections by Save Lamu Natural Justice. The ERC ruled that the environmental, technical and economic issues raised by Save Lamu Natural Justice have been addressed. Lamu is one of Kenya's oldest continually inhabited towns and one of the original Swahili settlements along the East African coast.

OI Pejeta conservancy offers Livelihood support to drought-hit pastoralists

To cushion communities in the Laikipia County in central Kenya from the effects of drought, the OI Pejeta Conservancy has come up with a Community Livestock Programme that lends money to pastoralists using their cattle as collateral. Through the programme, pastoralist communities give OI Pejeta their cattle for fattening and sale and in return, OI Pejeta provides full husbandry and a guaranteed market. Additionally, OI Pejeta pays the owners the value of their cattle plus interest for the period the animals are kept for fattening, according to a press release issued by the conservancy. By developing the model to empower pastoralists, OI Pejeta hopes to address some of the most immediate challenges facing communities and wildlife in and around the Conservancy, while nurturing commercial business relations that will develop into lasting partnerships based on mutual benefit.





Kenya announces ban on plastic bags

The Government of Kenya has announced a decision to ban the use, manufacture and import of all plastic bags, to take effect in six months. This announcement comes just three weeks after the United Nations declared a "war on plastic" through its new Clean Seas initiative. Some 100 million plastic bags are handed out every year in Kenya by supermarkets alone. "Kenya is taking decisive action to remove an ugly stain on its outstanding natural beauty," said Erik Solheim, Head of UN Environment.

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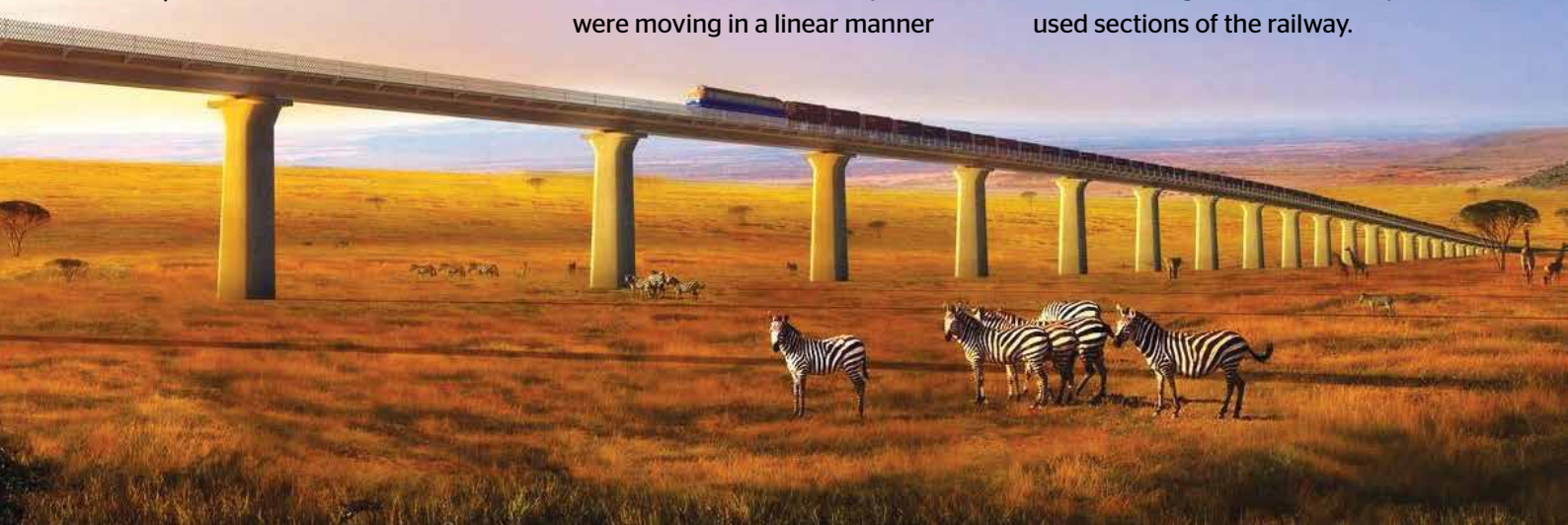
Report examines wildlife movements in new railway, roads in Tsavo

A new joint report by Save the Elephants and Kenya Wildlife Service is out summarizing preliminary findings of a long-term study on the effects of Kenya's Standard Gauge Railway (SGR) on elephant movements and ecosystem connectivity in Tsavo. The study analyses the extent of the utilization

of the of the wildlife crossing structures, exceptional elephant movements, the effect of water distribution on elephant movements and the recently constructed fence along the SGR.

According to the report, it was observed that collared elephants were moving in a linear manner

following the SGR. It is likely that those elephants were searching for the new underpasses. The analysis recommends that SGR electric fence should be designed to direct or funnel the animals climbing the embankments into the appropriate underpasses, or into specific open culverts along the most densely used sections of the railway.

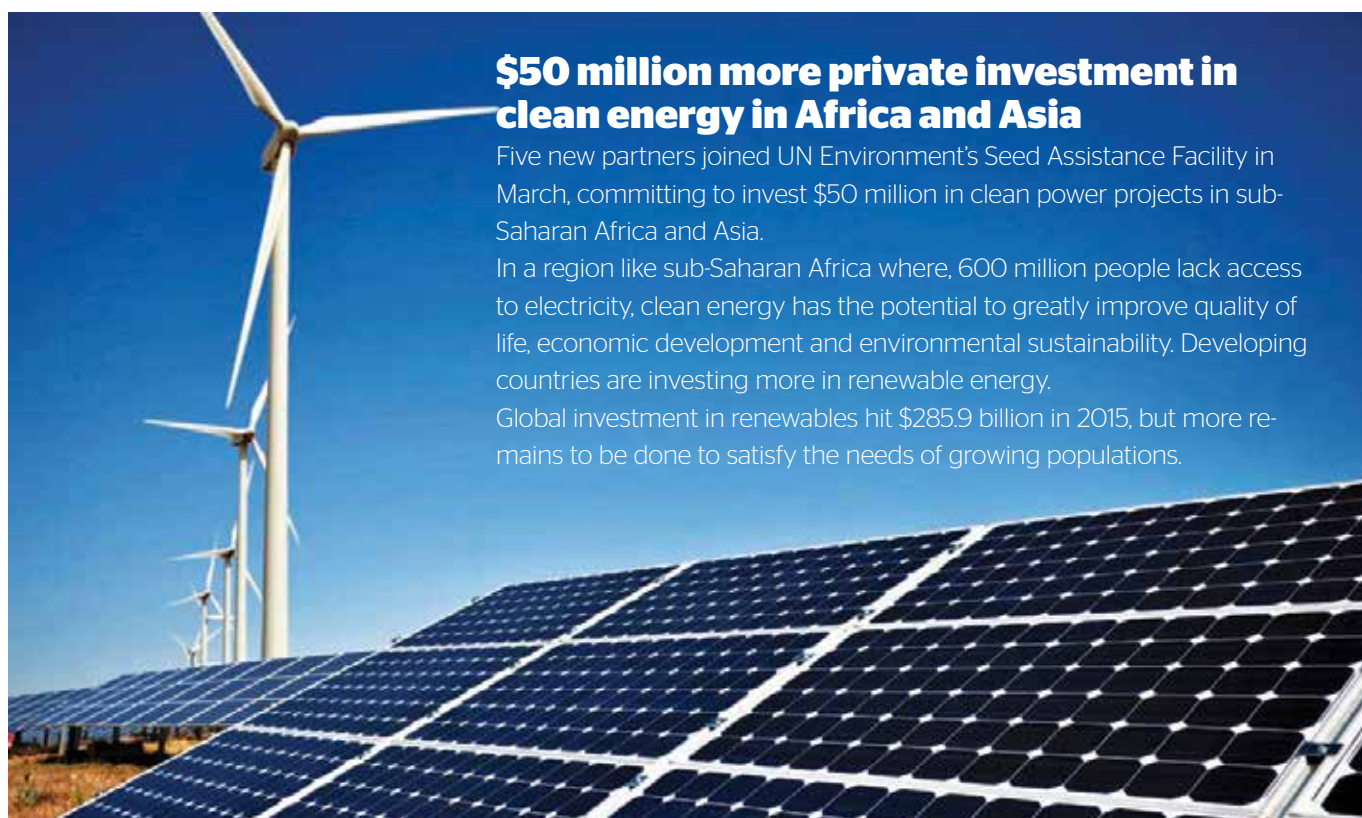


\$50 million more private investment in clean energy in Africa and Asia

Five new partners joined UN Environment's Seed Assistance Facility in March, committing to invest \$50 million in clean power projects in sub-Saharan Africa and Asia.

In a region like sub-Saharan Africa where, 600 million people lack access to electricity, clean energy has the potential to greatly improve quality of life, economic development and environmental sustainability. Developing countries are investing more in renewable energy.

Global investment in renewables hit \$285.9 billion in 2015, but more remains to be done to satisfy the needs of growing populations.



Bees defend Kenyan farmers against crop raiding elephants

The tiny bee has become a defender of farmers living next to Tsavo East National Park in Kenya against the marauding elephants that devour their crops. Over three and a half years, 253 elephants entered the farming area of Mwakoma village, usually when crops were ripening. Eighty per cent of the time, the elephants were turned away by the beehive fences, and the success has resulted in a rapid uptake of 'beehive fences' by other farmers in the community.

'Beehive fences' are a novel solution that has proven to be astonishingly successful. Elephants detest bees and will run away at just the sound of the angry buzzing emitted from a disturbed hive to avoid being stung around the sensitive eyes, mouth and trunk.




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Links between forests and energy highlighted on international day of forests

Kenya marked the 2017 International Day of Forests (IDF) on 21 March with activities in Ramisi, Kwale County, aimed at raising awareness on the importance of all types of woodlands and trees, and to highlight ways through which they sustain and protect communities.

The theme of this year's IDF was Forests and Energy and speakers at the event underscored the importance of wood energy in improving people's lives, powering sustainable development and mitigating climate change.

Forests have traditionally provided fuel for heating, cooking, sterilizing drinking water and meeting industrial needs. They have protected watersheds that enable hydroelectric generation and the relationship

between forests and energy has become even more critical. Cheap, easily accessible fossil fuels are running out, and their use releases huge amounts of greenhouse gases into the atmosphere, driving climate change, acidifying oceans and posing a threat to human wellbeing.

The Kenya Forests Working Group, a forum chaired by the East African Wild Life Society, aims to promote sustainable forest management in Kenya through research, advocacy, networking and partnerships to improve livelihoods. As the country's population grows and competition for land becomes acute, the production of more bioenergy could lead to food and water shortages and damaged ecosystems.

Pollution and climate change, along with the harmful impacts of drilling, mining, and transportation of fossil fuels pose a serious threat to the natural treasures. It is critical

that Kenya moves away from fossil fuels and swiftly toward renewable, non-polluting, and environmentally sustainable sources of energy.

A conservation strategy based on improved energy efficiency, transition to cleaner fuels, and investment in renewable energy technologies, such as wind and solar power, offers enormous promise.

KFWG urges policy makers, project developers and others to carefully consider the following issues when evaluating renewable energy proposals: What social and environmental safeguards are needed to manage risks? And can we produce more energy and still achieve our goal of zero forest loss and degradation?

By Jackson Bambo

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CONSERVATION

Livestock herders wreak havoc on wildlife conservancies in Laikipia

PHOTO BY: ANNE POWYS





PHOTOS BY: SEAN OUTRAM



AIDAN HARTLEY is a farmer in Laikipia. His farm was invaded in October.

LEFT PAGE: Buffalo cow shot dead by invaders.

INSERT: Burchell zebra shot and only a piece of skin taken

TOP RIGHT: Young buffalo calf wounded and left to die in a Ranch dam

Armed ethnic Pokot and Samburu herders began killing wildlife in Kenya the same day they invaded northern Laikipia's Mugie Conservancy in January. Systematic poaching spread to Suyian, Sosian and Ol Maisor when invaders together with their cattle overran those ranches in the following weeks.

Monitoring all incidents became impossible especially as security deteriorated, so the 144 animal deaths reported in the first 11 weeks of 2017 were surely a fraction of the total. What we know is that buffaloes were hardest hit, followed by elephants -- and then also lions, Jackson's Hartebeest, Reticulated giraffe, Burchell's zebra, eland, and several other antelope species.

Of the 23 elephants found dead or dying from bullets or spear injuries, Kenya Wildlife Service (KWS) were able to retrieve tusks from a few, some were very young -- while others were found with their ivory already hacked out.

Killings seemed highest around watering points. Many animal carcasses were left untouched except for the removal of strips of hide, genitals and other body parts, apparently



PHOTO BY: ARCHIE VOORSPUY

for ritual use. Carcasses were often left uneaten by scavengers, raising the possibility that they too had been killed off or driven away.

By late March, as the pastures were exhausted and a dry spell became a drought, wildlife began dying of starvation, signalling the much greater impact of invasions.

Together Mugie, Suyian, Sosian and Ol Maisor form 147,000 acres of conservation-friendly space. Aerial counts estimated some 100,000 invading cattle were packed into this area -- a semi-arid zone where the advisable stocking rate alongside wildlife is one adult cow (ie a Tropical Livestock Unit) per 15 acres.

Incursions on these ranches were simply the latest phase of invasions that have escalated since 2015 across at least 13 conservation-friendly properties, including Loisaba Conservancy and two community ranches in the Mukogodo. In all,

TOP: Young bull elephant shot on Suyian.

a conservation habitat of at least 497,000 acres has been overrun and depleted.

It was not the end of the game on these areas. Large herds -- remarkable numbers of elephant, giraffe and buffalo -- moved south and east onto ranches such as Mpala, Ol Jogi and El Karama. While wildlife deaths were alarming, from a population perspective the game still had spaces to occupy -- even up against the urbanisation and real estate developments gobbling up significant areas north of Nanyuki town.

Across much of this territory KWS, though legally responsible for all wildlife in Kenya, was too constrained in its resources to tackle the onslaught. 2017 is a year in which KWS's primary responsibility -- national parks and water towers -- are already under immense pressure from invading livestock, even up into the caldera of Mount Elgon at 14,000 feet.

LINE IN THE SAND

In Laikipia, KWS was simply too overstretched to assist across ranches that did not qualify as conservancies except in special cases, such as the euthanasia of injured elephants. As of March, the government had been unsuccessful in removing invaders and the violence persisted. For KWS,

CARCASSES WERE OFTEN LEFT UNEATEN BY SCAVENGERS, RAISING THE POSSIBILITY THAT THEY TOO HAD BEEN KILLED OFF OR DRIVEN AWAY.



PHOTO BY: ANNE POWYS

a line in the sand appears to have been drawn around Laikipia's rhino sanctuaries (Ol Jogi, Ol Pejeta and Lewa/Borana). The invaders appeared to have reckoned it was not worth testing these hard boundaries.

While still blinded by the dust clouds of the current situation, we have to consider what the longer-term impacts of the invasions could be on Laikipia's ecosystem. Apart from hosting the largest population of elephant north of the Equator (6,000-7,000), plus half of Kenya's rhinos, this is a last resort sanctuary for Grevy's zebra, of which just 2,350 survive, and a home to Jackson's Hartebeeste, together with Reticulated giraffe, down to 9,000.

Most worrying is the loss of habitat. Livestock from the counties of Isiolo, Samburu, Baringo and Laikipia -- 16,127,000 acres of rangeland most of which has been degraded over years of overgrazing -- are targeting ranches and conservancies that total no more than 860,000 acres of comparatively well-managed country.

Pastures in Laikipia's conservation space are rapidly being degraded. Wildlife, long a reservoir for diseases affecting domestic livestock, is now itself vulnerable to diseases from cattle, sheep and goats. The current fear is that the relatively minor scale of wildlife killings could, under cover of lawlessness, see a sudden escalation of poaching. In this current climate local extinctions are now possible: eland, for example, already in decline over the past 15 years and sought after for their meat, were down to a few hundred even before the invasions.

TOP LEFT: Jacksons hartebeeste Laikipia's rarest antelope, shot and a piece of skin removed.

TOP RIGHT: A young sub-adult male lion met its death after it had attacked a herder, up to 30 shots were heard where this lion died, they took all the claws and some skin.



PHOTO BY: THOMAS MOJONG

Even in the unlikely event that invasions ceased by the time of writing in March, the economic impacts will inevitably affect the prospects of conservation. For decades Laikipia's tourism industry has helped to bankroll conservation and provide the logic for wildlife protection. Economically the model has been a success. Some 32 members of the Laikipia Farmers' Association-LFA -- most of them on conservation-friendly properties -- contributed 3.86 billion Kenyan shillings (\$38 million) to the local economy in 2014-2016 and many of the 3,741 employees on those properties worked in the tourism business.

CATTLE BARONS

Due to insecurity, seven out of around 30 tourism lodges had to be closed by March 2017, including



PHOTO BY: SEAN OUTRAM

the community lodges at Il Ngwesi and Tassia, widely praised as fine examples of community conservation that helped alleviate poverty. Despite efforts by businesses in Laikipia's east and south to present invasions as a problem primarily affecting properties west of the Ewaso Ng'iro, the invasions are a public relations disaster for the local tourism industry. It will take time and effort to revive Laikipia's reputation.

It is widely acknowledged that invasions are driven by a group dubbed 'cattle barons', who include local politicians. As counties to Laikipia's north dried out in late 2016, spokesmen for the pastoralists argued that the search for pasture was the sole motive for migration.

There are other reasons, some of them politically related to national elections in August, together with a crisis in pastoralism. Apart from land degradation, research shows there is now an inequality in livestock ownership among pastoralist communities that was probably never previously so sharply pronounced.

In a recent case study among Laikipia pastoralists, just six per cent of the community

Suyian Soul camp set on fire by invaders.

owned the majority of the cattle, while nearly a quarter of households owned not a single cow. The massive growth of small stock among pastoralists is partly a response to land degradation, but cattle ownership remains the aspiration, even when there is not land sufficient for livestock.

However much the cattle barons acquired their huge herds, there is no future in impunity and conflict for either communities or Laikipia's conservation landowners.

In the midst of a crisis it seems pie in the sky to start discussing solutions: initiatives to restore degraded land, upping multiple-property grazing plans on ranches for communities, the revival of livestock marketing and veterinary standards, destocking, dry land arable farming as an alternative to ranching beef.

But Laikipia landowners are extremely keen to do whatever is necessary to survive. In the past when Laikipia's landowners set their minds to a conservation problem they have overcome it. The revival of Laikipia's African wild dog population is just one example. Laikipia hosts the 6th largest wild dog population in the world and perhaps, until the invasions, the only stable population of lions in Kenya. ●

\$38 MILLION

Amount some 32 members of the Laikipia Farmers' Association most of them on conservation-friendly properties contributed to the local economy in 2014-2016.

IT IS WIDELY ACKNOWLEDGED THAT INVASIONS ARE DRIVEN BY A GROUP DUBBED 'CATTLE BARONS', WHO INCLUDE LOCAL POLITICIANS.

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Conservationist Esmond Bradley Martin on saving the rhino



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.

In 1992, Esmond Bradley Martin was appointed United Nations Special Envoy for the Rhinoceros and tasked with meeting with heads of state to impress on them the need to take action to protect the endangered mega-herbivore.

The rhino's dilemma was its 'horn' – a pack of tightly matted hair growing on the pachyderm's forehead. It is made up of the same stuff as human hair and nails.

Twenty-five years later, Martin still insists that saving the rhino depends on political will and the seriousness of leaders. The king of Nepal personally called for the protection of the rhino. The leaders of India and Kenya followed with similar calls.

Standing beside his collection of hundreds of rhino figurines gathered over three decades, Martin is the face behind bringing international attention to the illegal trade in rhino horn and elephant ivory.



PHOTO BY: MOHAMED AMIN



PHOTO BY: ESMOND BRADLEY MARTIN

Tall and lanky, with his trademark shock of white hair, Martin realized there was a huge illegal trade in rhino horn and elephant ivory from poached animals when he arrived at the Kenyan coast to carry out research for his PhD in the 1960s. Accompanied by his wife Chryssee, the couple was in their 20s.

Since then they have worked together, along with Lucy Vigne and others, publishing many scientific papers. The Martins highly acclaimed coffee-table book published in 1982, *Run Rhino Run*, received rave reviews as the first lavishly illustrated book with a single aspect -- trade in a species that has been on the planet for the past 60 million years.

EARLY YEARS

Martin's involvement with the illegal trade in rhino horn and elephant ivory is unusual. Both topics are so wide. This article focuses on the illegal trade in rhino horn, leaving out elephant ivory for another time.

"I'm a geographer, not a zoologist," states

TOP: Anna Merz, a major supporter of rhino conservation in Kenya, is seen here with her orphaned black rhino, Samia, which she hand raised for three years.

LEFT PAGE: When it is available, water attracts black rhinos, perhaps more for wallowing than drinking. Black rhinos can go for extended periods without water, obtaining their requirements from plants.

Martin. "I left the USA in 1966 for my PhD at the University of Liverpool in England because it had one of the largest number of English-speaking staff members working in Africa in one department at the time in the world." The department was geography.

"For my field work I chose Lamu because I saw that it was where the least amount of academic work had been done, but because of instability in the area, I was given research clearance for Malindi. It was not until later that I was able to work in Lamu. My thesis was on the economic history of Malindi with comparison to Lamu."

No one had ever done an academic study on the economy of the ancient ports which was largely based on the dhow trade. Martin's interest originated from the 2,000-year old manuscript written in Greek, *The Periplus of the Erythraean Sea*. It is the first written document mentioning the East African ports, and the earliest written reference to the trade in rhino horn and elephant ivory on the East African coast.

"Chryssee and I got more intrigued with the dhow trade after visiting Tanzania, Iran and the Gulf States. They were dealing in illegal products -- people, rhino horn, elephant ivory and other stuff.

"The premise of our book, *Cargoes of the East*, was that if the dhow trade was operating in legal items, half of the dhows would be out of business in the western Indian Ocean."

Watching the dhow trade in the late 1960s

FOR OVER THREE DECADES, MARTIN IS THE FACE BEHIND BRINGING INTERNATIONAL ATTENTION TO THE ILLEGAL TRADE IN RHINO HORN AND ELEPHANT IVORY.

CONSERVATION

and 1970s, the Martins saw thousands of illegal immigrants from India and Pakistan being carried on the dhows and smuggled into the Gulf States. From the East African ports the dhows sailed away with other smuggled items -- the best quality mangrove poles from the Rufiji Delta, rhino horn and elephant ivory from poached animals to the Arab-Asian countries.

"It was very exciting looking at smuggling because very few academicians get involved in it. It's extremely challenging because you are looking for who the people are - like the traders and poachers, the markets, the networks, the prices. It's a culture."

What started as a PhD thesis morphed into a life-long career for the Martins.

RANGE OF RHINOS

"You cannot generalize rhinos," says Martin, in response to my question, if rhinos are facing extinction due to poaching.

"There are five species of rhinos in the world. The two species in Africa are the black and the white. Of the black, currently there are 5,200 and the white number 20,000. In 1900, Africa had

BELOW: When trotting or galloping, the tail of the black rhino is invariably held away from the hind legs. Frequent dust baths cause black rhinos to take on the colour of the ground where they live. This rhino in Amboseli typically matches its surroundings.

over a 100,000 black rhinos with the southern white close to extinction. "The lowest point for black rhinos was in 1994 with 2,400 surviving. The population doubled until two years ago. Since then the population has remained roughly the same.

The southern white rhino is a success story. From a handful surviving at the start of the 20th century, the numbers have been increasing due to concentrated management efforts. The northern white rhino, a subspecies from the war-torn regions of Central Africa, is however on the brink of extinction.

An estimated 1,134 southern white rhinos were poached in 2015.

"There are many reasons for this," continues Martin. "In 2012 and 2013, the price of rhino horn on the wholesale market in China and Vietnam was \$65,000 per kilogramme. Since then it declined by half because of a glut in the market -- but not for the poachers." They are still in business.

Seventy-five per cent of the poachers in and around South Africa's Kruger National Park, where most of Africa's rhinos occur, are mainly from neighbouring Mozambique. Extremely poor with few options of income, crafty traders exploit them by organizing the poaching, aware that the park is heavily understaffed with 500 rangers instead of the recommended one ranger-per square-ten-kilometres in the 19,485-square-kilometre park.

Coupled with high level corruption, the horns are smuggled into Mozambique, where there is

65,000

Estimated number of black rhinos in Africa in 1970

1,342

Estimated number of rhinos poached in Africa in 2015

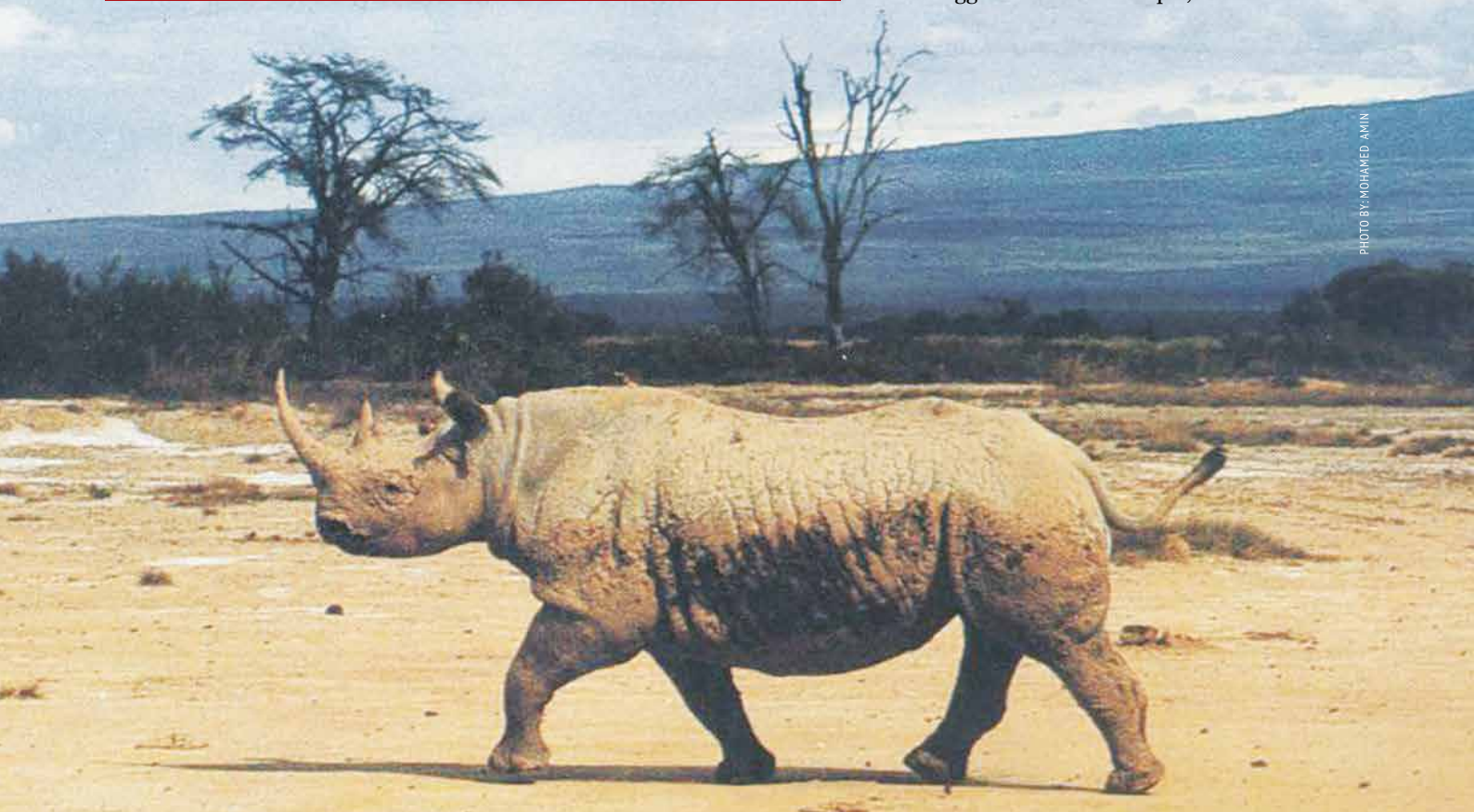


PHOTO BY: MOHAMED AWIN



PHOTO BY: INTERNATIONAL RHINO FOUNDATION

little law enforcement, and shipped out from Pemba island (not to be confused with the Tanzanian Pemba).

“Another factor is that the Chinese population has increased in South Africa and Mozambique and they are involved in the illegal trade. Money and corruption drive the trade.”

GROWING ECONOMIES

The economies of China, Vietnam and Laos are the fastest growing in the world today, expanding by six per cent per annum.

“When I was in Vietnam 27 years ago, I only saw one rhino horn. Now you will find lots of rhino horns in Laos and Vietnam with the main buyers being mainland Chinese. It’s a traditional part of Chinese culture and the main uses are for

The Sumatran rhino is one of the rarest large mammals in the world, with probably less than 100.

medicinal purposes and the making of jewellery and small ornaments. Rhino horn has very rarely been used as an aphrodisiac in Asia.

In Mumbai, India, some people in the Gujarati community used rhino horn in a paste to rub on an erect penis to make the erection last longer.

In Thailand, it is the penis of the very rare Sumatran rhino which is used as an aphrodisiac in traditional medicine. Although there’s almost no documentation of this, Martin challenges anyone to give him evidence that it’s not true.

“In China, rhino horn has been mostly used to lower fever,” states Martin.

RHINOS RUNNING OUT OF TIME

The two rarest species are the Sumatran and the Javan rhinos.

Martin talks about the Sumatran. “There may be 100 left in the wild, nobody knows. They are in mostly four fragmented groups on the two islands of Borneo and Sumatra.” Few and spread far apart, finding mates is a problem. Very few survive in captivity.

“The Sumatran rhino is the largest mammal in the world which may disappear soon. And

THE ECONOMIES OF CHINA, VIETNAM AND LAOS ARE THE FASTEST GROWING IN THE WORLD TODAY, EXPANDING BY SIX PER CENT PER ANNUM.



there's little being done about it while large chunks of indigenous forests are being cleared for palm oil plantations. The Sumatran rhino is in crisis because there is inadequate money and commitment to save it. "It really annoys me that there is so little conservation attention given to this species," says Martin. According to him, the remaining Sumatran rhino should be caught and translocated to a safe, large area and protected.

The other is the Javan rhino. "There are 62 but they are breeding. It shows some hope but there is a downside to it. The entire population is in only one location in Indonesia's Ujung Kulon National Park."

Heavily guarded, the entire population could be wiped out by a disease or worse still by the active Anak Krakatau volcano, the deadliest in the world. When it erupted in 1883, some 36,000 people perished and it has been the loudest sound ever recorded in history. The park lies on the western tip of Java island.

HANKERING FOR HORNS

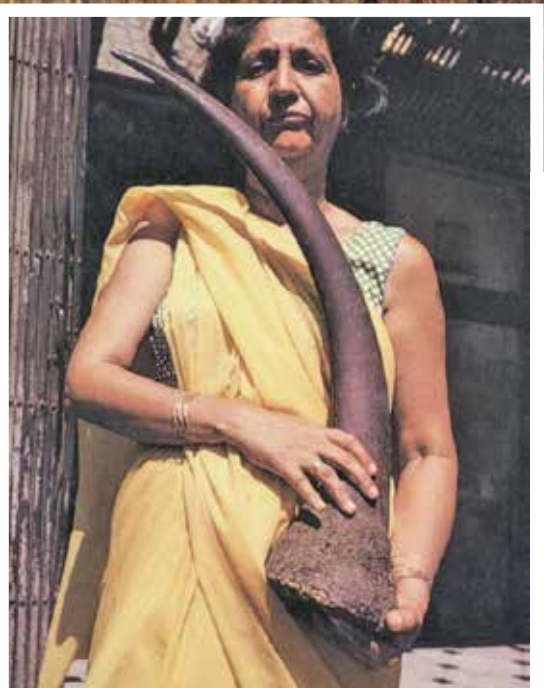
The preference is for the Asian rhino horn. Asians believe that the active ingredients are more concentrated in Asian rhino horns -- which are smaller than the African ones.

SUCCESS STORY FOR ONE ASIAN PACHYDERM

Fewer than 100 of the Indian greater one-horned rhino remained in the early 20th century. Today there are 2,900 in India and 649 in Nepal, thanks

TOP: One of the greatest conservation success stories for rhinos is the increase in the numbers in Kaziranga National Park, India, from under 20 animals in 1912 to 2,500 today.

RIGHT: Although in the 1980's less than one percent of all the rhino horn sold was used as an aphrodisiac, horns like this horn, held by a Gujarati woman in the muslim Pydhoni area of Bombay, were ground into powder and mixed with herbs for that purpose.



to strict protection from Indian and Nepalese wildlife authorities.

"It's one of the two greatest success stories in rhino conservation. It's all down to good management and the fact that the two heads of state took a personal interest in rhino conservation," according to Martin.

In the last three years only one rhino has been poached in Nepal, yet the country is one of the poorest in the world.

"In India, a country of 1.3 billion people, rhino, elephant and lion populations are increasing," continues Martin. "How do you explain that in such a populated county?"

He explains after a pause.

At independence in 1947, the two political families -- the Nehrus and the Gandhis -- took keen interest in wildlife conservation. Even today,

the National Board for Wildlife is chaired by the country's prime minister. "The commitment has to come from the top."

There are no major Chinese gangs dealing in rhino horns in India and Nepal. Automatic weapons are difficult to obtain and Indians have strong local conservation NGOs, a vibrant free press, and 90 per cent of the tourists to the national parks are locals.

"These animals are part of their culture," says Martin. They are revered and the Indians have a completely different philosophy from someone like Mugabe in Zimbabwe with his famous statement 'if wildlife pays, it stays'. It is the opposite of Nepal's outlook to wildlife.

Although one of the world's poorest countries, the Nepalese government closed down all the lodges in the Chitwan National Park recently despite losing revenue from tourism. The argument is that the park is a UNESCO World Heritage Site, a stronghold for the pachyderms and the big cats -- hence the protected area must remain intact for the wildlife. Tourist accommodation is offered just outside the park.

KENYA'S RHINOS

With an estimated 1,120 rhinos in 2015 -- 680 indigenous black and 440 white originally from South Africa -- Kenya's population is increasing with only 11 poached in 2015 and 10 in 2016. Hard hit in the early 1970s when rhino numbers crashed from about 20,000 to 500 in the early 1990s, rhino numbers are now on the increase thanks to the public and private sectors working together, putting in more resources into the protection of the pachyderm, stiffer jail terms of up to 20 years, improved intelligence gathering and fines of millions of Kenya shillings for poachers and traders.



PHOTOS BY: ESMOND BRADLEY MARTIN

RIGHT: A black rhino is translocated out of Nairobi National Park into Tsavo National Park Kenya in 1996.

BELOW: A scientist inspects a collection of rhino horns held by the Kenya Wildlife Service in Nairobi, Kenya.

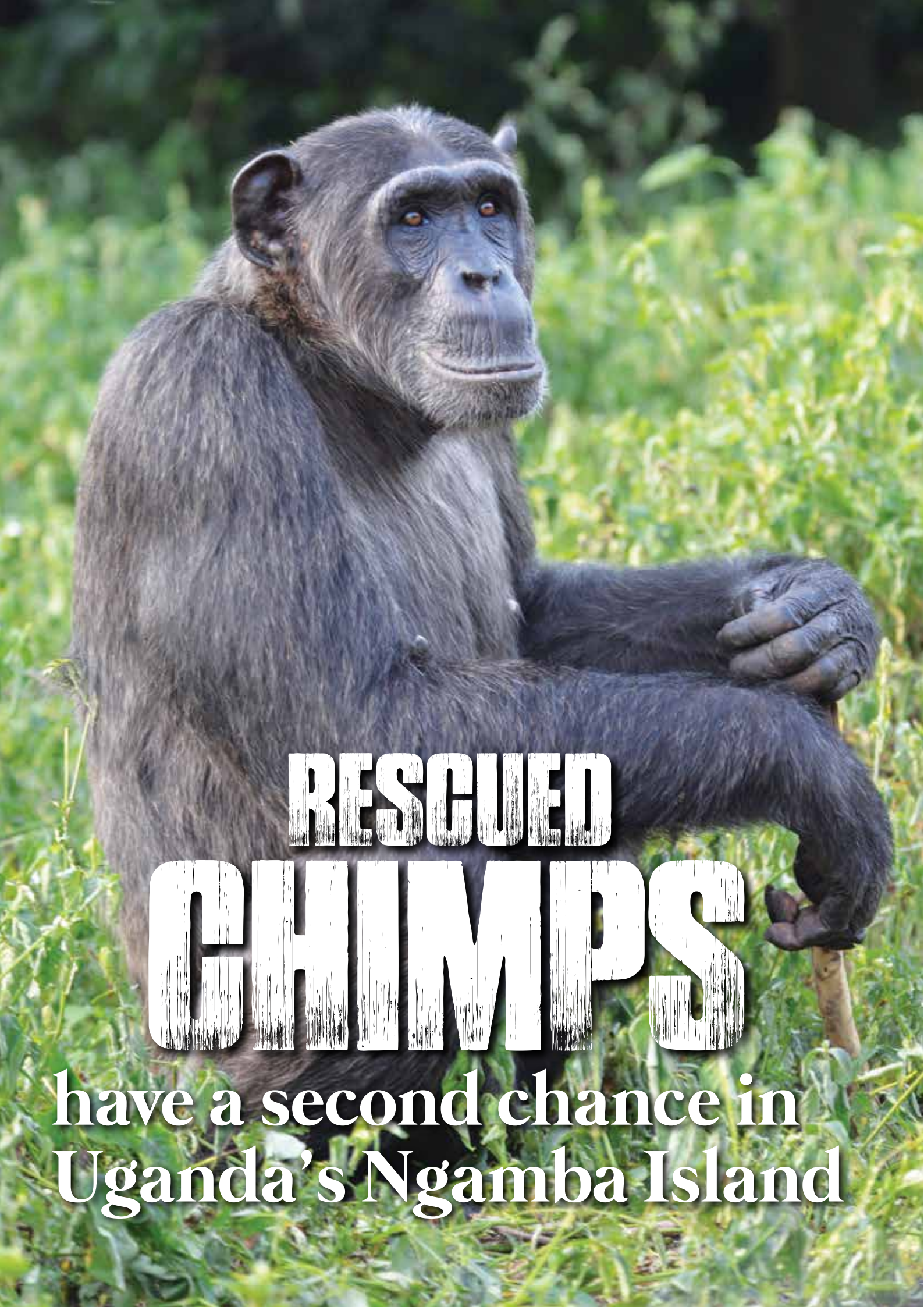
A PERSON FOR THE RHINO

"It all comes down to management. If you want the animals, you just have to come up with a management plan and follow it through," states Martin. "I want to see these animals protected, especially the Sumatran -- it's top priority. And find a second home for the Javan."

"I would like my old job as the UN rhino envoy to be taken over by someone and for the person to go and meet the number one person -- the head of state in each of the rhino range states and consuming countries to improve conservation of these animals. Such an approach should not fail."

He has Zimbabwe's President Robert Mugabe as reference. When Mugabe lamented that there were not enough resources to adequately protect Zimbabwe's rhinos, Martin suggested raising the entry fee into national parks from about one US dollar to 10 for foreign visitors. It was done in a few months.

But demand for rhino horn remains with hawk-eyed poachers on the fence-line watching for an opportunity to strike. ●

A chimpanzee is sitting in a grassy field, looking off to the side. The chimpanzee has dark fur and a lighter face. It is holding a small stick in its right hand. The background is a lush green field with some trees in the distance.

RESCUED CHIMPS

have a second chance in
Uganda's Ngamba Island



STORM STANLEY

was born in Tanzania and has spent most of her life in Kenya. She holds a MSc degree in Environmental Decision-making and is the Managing Editor of the Pachyderm Journal, dedicated to African elephant and African and Asian rhino research.

TOP: Visitor feeding infant Eazy.

Most of the 49 chimpanzees being rehabilitated on Ngamba Island in Uganda by the Chimpanzee Sanctuary and Wildlife Conservation Trust (CSWCT) had never met before, other than three babies born in July 2002, March 2015 and February 2016.

On the whole, they have formed a cooperative community, intermingling contentedly in cohesive groups -- complex family and social interactions are essential to all chimpanzees. There is a hierarchy -- chimps are known for dominant/submissive social stratification, with high to low ranking members.

Ngamba Island on Lake Victoria was established as a chimpanzee sanctuary in October 1998, starting with 11 Eastern chimpanzees (*Pan troglodytes schweinfurthii*).

In order to provide a secure home for orphaned and rescued chimps, 100 acres of near pristine forest was purchased with donor seed funding by a partnership of national and international

conservation organisations, including the International Fund for Animal Welfare, Born Free Foundation, Jane Goodall Institute, Taronga Zoo, Australia, Uganda Wildlife Education Centre (UWEC), Uganda Wildlife Authority and Ecotrust Uganda.

In the administration block, I read several chimpanzee profiles. Most of the chimps were victims of the illegal live trade in wildlife, and were confiscated from dealers. Three chimps -- Masiko, Sunday and Megan were returned from Russia destined for a circus in Moscow. Another four came from war-torn South Sudan -- Sara, Medina, Cocoa and Minni.

Nagoti was "locked in a cupboard for three days and arrived dehydrated" Baluku was "found with a rope tied around his waist; which cut deep into his skin. "Locked in the dark for days, Baluku still bears those (physical) scars". It is the emotional ones, however, that take the longest to heal, according to Innocent, one of CSWCT's caretakers. Another chimp, Ndyakira, was "confiscated from a hotel in Kampala, and paraded in court as evidence!"

The fate of yet others indicate they were to be used in animal testing labs, and even as exotic pets. They are often traumatised having witnessed their mothers and family units being slaughtered and then kept in isolation

NGAMBA ISLAND ON LAKE VICTORIA WAS ESTABLISHED AS A CHIMPANZEE SANCTUARY IN OCTOBER 1998, STARTING WITH 11 EASTERN CHIMPANZEES



LEFT: Infant Eazy protected from adult chimps who can play rough.

RIGHT: One of the chimps patiently waiting for treats.



PHOTOS BY: STORM STANLEY

chained up in basements or suffocating in deplorable conditions. All of them have a heart-breaking story other than the three youngsters accidentally born on Ngamba Island. The first baby born accidentally on the island is appropriately named “surprise” (Kyewunyo). In fact fertility needs to be strictly controlled so that the chimpanzees do not exceed the carrying capacity of the forested island.

Chimps are reckless with their environment not unlike humans, with whom they share 98.7 per cent of DNA. In their natural environment chimps build a new nest to sleep in every night, while on Ngamba Island they are encouraged to sleep in woven hammocks in several large enclosures so that the Island ecology is not disturbed or degraded. Today 37 return, another 12 have remained in the forest, including the dominant female, Nkumua rescued in 1997.


PERILOUSLY CLOSE TO EXTINCTION

The chimpanzees’ diet is also supplemented with what is available in nature. There are additional food fests in the morning and evening, to lure the chimps out of the forest, and I wait on a shaded viewing platform to watch the animated chimps. Their glossy hair shines in the morning sunlight, intelligent beady eyes stare back at you making eye contact, unnervingly human. With dextrous fingers chimps clasp their snack of fruit or vegetable and scurry away before a more dominant chimp tries to steal it.

While Ngamba Island provides a natural enough habitat for the chimpanzees, the long-term aim is to reintroduce as many of the chimps as possible, in groups of around 10 to new homes in the Ugandan and Tanzanian rainforest, where the Eastern chimpanzee is located. This poses other problems due to diminishing habitat, and fragmented ecosystems, particularly because there are already chimpanzees living in the last few ideal places.

Like all other ape species, chimpanzee numbers continue to plummet in the wild, according to recent estimates. Between 150,000 and 200,000 remain. With numbers declining by as many as 6,000 per year, chimpanzees are classified as ‘Endangered’ on the IUCN Red List.

According to the Global Forest Reporting Network, Mongabay, “agricultural expansion has

A chimpanzee is shown climbing a large, textured tree trunk. The chimpanzee is positioned vertically, with its body pressed against the bark and its limbs wrapped around it. Its head is turned slightly to the right, looking towards the camera. The background is a soft-focus green, suggesting a forest environment.

Chimpanzees are good climbers. A youngster perches on a tree trunk keeping a safe distance from more dominant older chimps during feeding time.

led to the clearing of primate habitat three times the size of France between 1990 and 2010; impinging on the range of 76 per cent of apes and monkeys, although primates also face serious threats from hunting logging and ranching.”

Gorillas, chimpanzees and orangutans -- our great ape cousins -- are perilously close to extinction. “It is not much of a secret that we humans have had a lot to do with putting them there,” says John Canon, reporting for Mongabay.

There are three main programmes to the core work of CSWCT, a non-governmental organisation. The main one is the primate welfare programme with long-term management of the Ngamba Island sanctuary for confiscated individuals, which cannot be returned to the wild. Secondary functions include the in-situ conservation of chimps in the wild and conserving natural habitat in unprotected areas, together with engaging local communities. An essential component includes environmental awareness -- empowering the youth as agents of change.

PSYCHOLOGICAL THERAPY

Core values observed by CSWCT include maintaining the integrity of individual chimps, with the care of each chimp tailored to suit their needs. When a chimp arrives at the sanctuary, he or she is given specialised treatment, which often necessitates psychological therapy, including music and painting.

As the work of CSWCT expands to include protecting the habitats of chimps in the wild, a new programme in Hoima has been set up. Hopefully it is not too late. Lilly Ajarova the executive director for the Trust, who can distinguish one chimp from another, emphasises the point about habitat loss: “The importance of protecting the rainforest, not just for chimps and the wildlife they share their forest with, but for humankind as a provisioning service, water catchment of forested areas is essential and urgent.”

The chimps are initially quarantined for 90 days at the Uganda Education Centre before being transferred to Ngamba

Island where they are gradually integrated into the resident sanctuary population. A fully operational veterinary clinic provides specialised care to treat the chimpanzees for human inflicted injuries or wounds received during fights for social dominance or food. The vets also regularly monitor the chimpanzees' health for respiratory illnesses and provide birth control implants.

Back at the sanctuary, not all of the stories we hear are sad. Inquisitive by nature, just like their human cousins, Sunday nicknamed the Boat Captain, accidentally launched a fishing boat left carelessly close to the shores of Ngamba Island. The startled chimp was rescued before sailing off across Lake Victoria, whose tides and currents can be as capricious as the sea. On another occasion several years earlier, a resident from nearby Nsadzi Island was found fast asleep on Ngamba Island by Sunday. The fisherman startled and afraid jumped into the lake screaming and swam away. It was noted later that the fisherman had been drunk, lost his way in the dark and landed on Ngamba Island the previous night.

Visitor revenue helps to augment donor funding. Open all year round there are two feedings each day, and visitors can interact safely with certain habituated chimps under supervision of the staff. There are four comfortable double tents (10 more mobile tents can be arranged at short notice) to accommodate overnight visitors on Ngamba Island. Note that it is necessary to have certain vaccines if you wish to participate in some of the close interaction caretaking activities with chimps. Details can be obtained from contacts below.

With the dusk birds who inhabit the island, especially water birds, come to roost weaving

PHOTOS BY: STORM STANLEY



TOP: Chimp "hooting".

BELOW: Tourists can be accommodated overnight on Ngamba island.

elaborate paths. These days, Innocent tells me there are more and more birds residing here; surrounding islands show evidence of deforestation and over-grazing. However, as the chimpanzees begin to quieten down, like teenagers after the excitement of a good party, these 49 are safe from a life of exploitation -- at least for now. ●

Website: <http://ngambaisland.org>

Facebook: <http://www.facebook.com/ngambaisland>.

Reservations: reservations@ngambaisland.org





PHOTO BY: JO-ANNE MCARTHUR/UNBOUND PROJECT

Coffee farming as a gorilla conservation tool in Uganda



CHARLOTTE BEAUVOISIN

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AMY ROLL is the advocacy and partnerships coordinator at Conservation Through Public Health.

Hidden in the dense rainforests that stretch across Uganda's southwestern border with the Democratic Republic of the Congo dwells a gentle giant that has intrigued and amazed the world for hundreds of years.

Uganda is home to half of the estimated 880 mountain gorillas alive today, but the great apes are critically endangered. Their home in Bwindi Impenetrable National Park, a UNESCO World Heritage site and biodiversity hotspot, is a fragile habitat under threat.

People living around Bwindi are among the poorest and most marginalized. They have inadequate access to basic social services, including healthcare and a means to provide for their families. This forces them to depend on

the forest for basic needs such as food and fuel wood. But every time people enter the forest, they interfere with the gorillas' habitat and could transmit human diseases to the gorillas. But lacking viable alternative livelihoods, people continue to poach and cause deforestation in the park.

Conservation Through Public Health (CTPH), a Ugandan non-profit organization featured in the January-March 2017 edition of *Swara* is supporting biodiversity conservation by enabling humans, wildlife and livestock to coexist while improving the health and livelihoods of people in and around protected areas. It is CTPH's mission to save the endangered mountain gorilla by improving rural public health and community

WORKING WITH COMMUNITIES, CTPH DISCOVERED THAT THERE IS A GROWING LOCAL ECONOMY AROUND COFFEE FARMING.



PHOTO BY: JO-ANNE MCARTHUR/UNBOUND PROJECT

attitudes towards conservation. Working with communities, CTPH discovered that there is a growing local economy around coffee farming. Coffee is of vital importance to Uganda's economy. The commodity accounts for 22 per cent of the country's export earnings. While there is great potential to benefit from the coffee industry, CTPH found that the impoverished communities that grow coffee on the slopes of Bwindi Forest lacked the resources and the reliable coffee market required to increase their income, improve their way of life and hence reduce encroachment on the gorillas' habitat.

CTPH has partnered with World Wide Fund for Nature (WWF-Switzerland) to create Gorilla Conservation Coffee, a social enterprise that is saving gorillas 'one coffee sip at a time.' Some 75 small-holder coffee farmers in Bwindi have come together to form the Bwindi Coffee Growers Cooperative. They are being taught sustainable farming practices and good post-harvest coffee handling techniques, in addition to being paid a premium for their coffee and having a steady market for their product. Coffee farmers in the cooperative are already reaping the benefits. Hundreds more farmer are expected to join the cooperative in the near future.

Gorilla Conservation Coffee will not stop there: With every purchase of a bag of coffee, consumers help ensure the survival of the critically endangered mountain gorilla. As a social enterprise of CTPH, sales from Gorilla Conservation Coffee provide sustainable financing for CTPH programmes.

The primary goal of Gorilla Conservation Coffee is the protection of mountain gorillas and their habitat through inclusive growth and support for the local economy around Bwindi Impenetrable National Park. Gorilla Conservation Coffee connects the growing economic prosperity of the farmers with gorilla conservation. With the right

LEFT PAGE: Coffee farmers wash the highest-quality, ripe coffee cherries, which will eventually be made into our Kanyonyi Coffee Blend.

TOP LEFT: Dr. Gladys and members of the Bwindi Coffee Growers Cooperative inspect coffee grown around Bwindi Impenetrable National Park.

TOP RIGHT: Arabica coffee being harvested in a farm around Bwindi Impenetrable National Park.

BELOW: Gorilla Conservation Coffee is 100% Arabica coffee and is now for sale in Uganda and online.



PHOTOS BY: CONSERVATION THROUGH PUBLIC HEALTH



support, farmers are less likely to damage the gorillas' habitat.

There is no one solution to gorilla conservation, but Gorilla Conservation Coffee is a community-driven solution that supports local coffee farmers and their families to reach their full potential. Gorillas are unlikely to survive without the support of the local communities with whom they share a fragile habitat.

Gorilla Conservation Coffee is on sale at tourist lodges across Uganda, Banana Boat gift shop, at Entebbe Airport's Duty Free shop and the website: www.gorillaconservationcoffee.org

For more on Conservation through public health visit:
www.ctph.org

Community-based Efforts to Mitigate Human-Lion Strife in Uganda



MICHAEL SCHWARTZ
is a freelance
journalist and
African wildlife
conservation
researcher.

BELOW: A lioness near the border of South Sudan in Uganda's Kidepo Valley National Park.

My colleague Moses Konde and I were in Kidepo Valley National Park in Uganda last year, hoping to film an elephant migration for the National Geographic Society.

We were heading down a long dirt track near the border of South Sudan in search of a bachelor herd, when suddenly we spotted a lone lioness hunched over a small pool of rainwater. She was a relatively old girl, judging from her charcoal-black nose and gaunt face, not to mention the noticeable ribs that ran along her underside.

Finished drinking, she headed over to a termite mound to lie down, ignoring our presence in regal fashion. As she stared off in the direction of the border, I knew that if she dared cross over, she'd either be shot or snared by Sudanese poachers, or perhaps poisoned by pastoralists defending their cattle. I mouthed a silent prayer to myself, hoping that she'd stay in the park where it was safe. But lions are as much opportunists as they are hunters. Bottom line, they often target the easiest meals, and at that lioness's ripe old age, a small

1,442KM²

Size of Kidepo Valley
National Park

goat or a slow-moving cow would be far easier pickings than an angry buffalo.

There are a decent number of lions in Kidepo, all living in and around a park that's flanked along the border by poachers, poisons and snares. It's a harsh world for people and lions, I recall thinking to myself. A beautiful, terrifyingly harsh world.

I decided to return to the Pearl of Africa, as Uganda is often called, in early 2017 to learn more about how the lesser known population of Africa's largest of big cats were faring. Uganda boasts a small but stable number of lions





-- roughly 350 of them. Apart from only one reportedly living in Lake Mburo National Park, most reside in the country's largest protected area, Murchison Falls National Park, the tourist-favoured Queen Elizabeth National Park and Kidepo Valley National Park, a pristine, largely unknown wilderness in the far north of the country.

I decided to check out Queen Elizabeth National Park, a 1,978-square-kilometre wildlife sanctuary in western Uganda hosting about 70 lions, most of which are closely monitored by a small team of dedicated conservationists from the Uganda Carnivore Program (UCP).

HUMANS VERSUS LIONS

Led by Dr. Ludwig Siefert, a German wildlife veterinarian and conservationist, and with assistance from California's Oakland Zoo and the Disney Conservation Fund, UCP engages in carnivore (lions, leopards and hyaenas) research and conservation, which includes implementing

"CONFLICT WITH HUMANS IS THE BIGGEST THREAT FOR LIONS HERE," SIEFERT EXPLAINED.

TOP: A male lion rests atop a fig tree in the Ishasha sector of Queen Elizabeth National Park.

BELOW: Dr. Ludwig Siefert is a wildlife veterinarian and head of the Uganda Carnivore Program, based in northern Queen Elizabeth National Park.



PHOTOS BY: MICHAEL SCHWARTZ

a variety of community-based efforts, primarily designed to mitigate human-wildlife conflict.

"Conflict with humans is the biggest threat for lions here," Siefert explained, referring to situations where lions and other predators encounter local people and their livestock, both outside and within Uganda's national parks.

"Whereas Queen Elizabeth's lions will sometimes venture into human territory, especially along the Kasese boundary in the north and Lake Katwe in the west, pastoralist communities occasionally bring their cattle into the park to graze, which can lead to livestock depredation."



One of the matriarchs from Lena's maternal group.

Kidepo Valley National Park

lies in the rugged, semi arid valleys between Uganda's borders with Sudan and Kenya, some 700km from Kampala. Gazetted as a national park in 1962, it has a profusion of big game and hosts over 77 mammal species as well as around 475 bird species.

Queen Elizabeth is also home to roughly 30,000 people, some of whom live in 11 enclave villages scattered throughout the park, making human-wildlife conflict the biggest challenge for conserving its lions.

Human-wildlife conflict involving lions sometimes results in deadly retaliation by people. Some of the worst years were between 2006 and 2012, when an estimated 36 living in the northern sector were poisoned, representing just under 50 percent of known lion deaths in the area within that period. Other causes of death included being shot, getting killed by fearful mobs or accidents with oncoming vehicles.

Such anthropogenic threats have impacted the social size of Queen Elizabeth's prides, meaning that instead of upwards of 20 lions -- the average size of a standard pride in East Africa -- a Ugandan pride typically consists of smaller maternal groups spread out over a wider area with dominant male coalitions controlling multiple maternal groups at a time.

SINGLE MOTHERS

Consequently, some areas of Queen Elizabeth National Park now only contain single mother lionesses that have all but lost the benefits of feline sociality they would otherwise enjoy. As it stands, there are a grand total of just 28 breeding

lions out of the estimated 54 living in the northern sector of the park.

Siefert took me to see one of the largest group of lions, located in Queen Elizabeth's northeast region of Kasenyi, consisting of two male coalitions (five lions) overlapping with two maternal groups.

Matriarch, Lena, and her sister, Bridget, lead a maternal group totalling around 12 felines. We happened upon them near a grove of candelabra euphorbia trees, all looking well rested after having recently fed on a warthog and buffalo calf.

"He's going to climb up," Siefert said clairvoyantly as one of the juveniles walked past us toward a candelabra where several other lions were sleeping. Seconds later, the young male launched himself up the spiny sides, seemingly to get a better view of us.

"There's more over there," Siefert added, pointing toward some nearby thorn bushes. As I let my eyes adjust, the outlines of several big cats inside the dense thicket began to take shape. One of them was Bridget, an old, but queenly looking lioness with a cataract developing over her left eye.

Both she and Lena had certainly seen plenty of action, evidenced by the visible scars around their faces. But the group is thriving in spite of the hardships, thanks to the continued efforts



of Siefert and the UCP team, who purchase lights for village cattle enclosures, construct safe corrals and even assist in human-wildlife conflict education efforts at local primary and secondary schools.

It dawned on me that UCP is on the front lines of an ongoing battle, their goal not only to save Uganda's lions and other predator species from extinction, but also to help improve the quality of life for people.

"Lions are an integral part of Uganda," Siefert said. "Conserving them starts with talking to communities, offsetting human-wildlife conflict and helping meet the basic needs of local people and integrating them into the tourism market."

As I watched Bridget sitting quietly in the shade, I was reminded of the lone lioness I saw in Kidepo Valley National Park one year earlier, realizing that the challenges that Queen Elizabeth's lions are facing are but a mere microcosm for every lion remaining in the Pearl of Africa.

I remember standing just over the border in neighboring South Sudan in the fading light of evening, the setting sun coating the escarpment in brilliant, fiery tones, while the sky cast a somber, bluish hue over the valley. There I stood, hoping, praying that that old lioness didn't cross



A juvenile lion in the Kasenyi sector of Queen Elizabeth National Park.

Uganda contains a high number of kob, which lions often hunt.

the border. "OK, let's be off," our ranger ordered, presumably concerned about armed poachers who typically conduct their clandestine affairs after dark.

I took one last look, the soaring plateau and thorny savanna unfolding toward a majestic horizon in the cool of early evening.

It's a bittersweet place—one I'm unashamed to admit that I will never fully understand; where sunlight and dust bathe the terrain in dazzling colours; where roaring lions and impoverished communities both struggle to survive; and where poachers, poison and snares lie in wait. ●

To learn more about how you can help Uganda's lions, leopards and hyaenas please visit: <http://www.uganda-carnivores.org>

Conservation impact bonds: Innovative source of funds for biodiversity conservation



FELIX PATTON is a rhino ecologist. 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.

TOP RIGHT: A Rhino Impact Bond could bring new sources of funding to rhino conservation.

Africa's biodiversity is under threat from an ever growing number of challenges. Poaching for greed heads the list be it elephants for ivory, rhinos for horn, pangolins for scales or primates and antelopes for trading bush meat. Then there is illegal logging for wood and charcoal, indiscriminate fishing, the extraction of minerals, the growing need for energy and so on.

Saving the remaining biodiversity, or at least ensuring priority areas are protected, costs money and in significant amounts whether it be on a relatively small scale to improve security at an individual conservancy or on a major scale to protect whole ecosystems. New sources of finance are, and will continue to be, sort and focused -- but where from?

Conservation is not alone in seeking money and can learn from other areas. Becoming increasingly popular are Social Impact Bonds. This is where finance is acquired from providers for investment in a social enterprise against an agreed return based on measurable outcomes.

A Social Impact Bond is a public-private partnership which funds effective social services, for example projects to reduce the rate of prisoners re-offending, through a performance-based contract. All levels of governments -- local, regional, national, international -- can partner with high-performing service providers using private investment to develop, coordinate, or expand such social programmes. If, following measurement and evaluation, the programme achieves predetermined outcomes and performance metrics, then the outcomes payer



PHOTO BY: RHINO FUND UGANDA

(most often government) repays the original investment. However, if the programme does not achieve its expected results, the payer does not pay for the unmet metrics and outcomes. Thus, such Bonds mean investors can earn a modest return, but also risk a complete loss of funds.

There is a spectrum of investment capital -- from philanthropic and high net worth individuals to some early examples of pension fund investment. One strategy used in New York State has involved Bank of America Merrill Lynch serving as a placement agent by distributing the opportunity to invest in a project on its wealth management platform. In the United Kingdom, private individuals have already invested in Social Impact Bonds that benefit from the Social Investment Tax Relief which was enacted in the UK in 2015 and has the effect, for such investors, of mitigating risk.

The concept behind the Social Impact Bond has been taken up by the conservation groups supporting the United for Wildlife initiative with a view to developing a Rhino Impact Bond. The cost of securing rhino conservancies from poaching has sky-rocketed since 2008 and new sources of finance are essential. The aim was to launch a \$25-35 million Rhino Impact Bond by

A SOCIAL IMPACT BOND IS A PUBLIC-PRIVATE PARTNERSHIP WHICH FUNDS EFFECTIVE SOCIAL SERVICES, FOR EXAMPLE PROJECTS TO REDUCE THE RATE OF PRISONERS RE-OFFENDING, THROUGH A PERFORMANCE-BASED CONTRACT.



2018 in a regional rhino meta-population of a cluster of 5 to 7 protected areas. The first step, a three year testing phase, was started in 2015.

The success of an Impact Bond relies on being able to reliably measure outcomes from the financed interventions. It is therefore important to select interventions that will result in readily measurable outcomes. To show that progress has been made at the agreed level, it is also essential that there is sound baseline data at the start.

MEASURING OUTCOMES

For rhinos, most population sizes are known and accurate as they are based on the identification of individual animals. Annual growth rates can therefore be easily calculated. Any deaths from poaching can also be recorded so that the number of rhinos poached per year can be calculated. This means that suitable measurable outcomes for a Rhino Impact Bond could be: i) a given increase in growth rate per annum, and ii) a given reduction in rhino poaching over a set period. Should the targets be met over the ten year period

Increasing the number of poachers caught would be a measurable outcome of an Impact Bond.

of the Bond, the investors would receive payback of their investment along with an Internal Rate of Return of between 5 and 10 per cent depending on the level of outcomes achieved. However, should the outcomes not be met, the investors may lose not only their hoped for interest but also their original investment.

In principle, the initial investment would come from non-traditional capital markets with the outcome payments from traditional donor agency and philanthropic sources. The Bond approach takes from the traditional sources the risk of failure of a project but adds to them the additional cost of paying a return to the investor.

Underfunded biodiversity and ecosystem conservation is not uncommon around the world. One vehicle for financing conservation involves the creation of conservation trust funds (CTF), which are private, legally independent grant-making institutions that provide sustainable financing for biodiversity conservation and natural resource management. CTFs raise and manage capital to make grants to organizations



PHOTOS BY: RHINO FUND UGANDA

Removing invasive plants to increase the carrying capacity of a conservancy, a measurable outcome.

and projects that support the mission of the CTF. The beneficiaries of CTFs include non-governmental organizations (NGOs), community based-organizations (CBOs), governmental agencies (such as national parks agencies) and research institutions.

CTFs can be an effective means for mobilizing additional funding for biodiversity conservation and natural resource management from international donors, national governments and especially the private sector.

The CTF approach is being taken in Uganda where there are a multitude of donor organisations and philanthropists whose support of conservation is valued but is not necessarily focused on priority areas and whose impact is reduced by “a little going to a lot” rather than “a lot going to a little”. To overcome this and give guidance to donors as to where funding is best placed, a route for investors in conservation has been created by the Uganda Biodiversity Fund (UBF) managed by a Trust.

UBF is set up to manage a diverse array of funding, including endowments, long-term sinking funds, short-term funds and

compensation funds to offset the impact of their business on the environment (for example, mining industries). To provide a stable source of funding for conservation annually, UBF has set a target for the endowment of \$80 million in the next 5 to 10 years. For all funds and investors, UBF can provide an effective and efficient mechanism for management and oversight of projects.

Uganda was planned to be a beneficiary of an initiative of the African Wildlife Foundation who, in conjunction with Conservation Capital, have established African Wildlife Capital (AWC). Finance is obtained from impact investors (with Hong Kong and China of particular interest), from high net worth individuals and foundations and from governments such as the European Union, United States and Norway.

CONSERVATION BOND FOR KENYA, UGANDA, TANZANIA

AWC provides financing to small and medium sized enterprises primarily in agriculture and conservation tourism with the aim of benefiting local people through employment, revenue



PHOTOS BY: RHINO FUND UGANDA

INSERT: Clearing bush by burning to give quality grass after the rains encourages a measurable increase in biodiversity.

sharing, improved supply chains, and out-grower arrangements. Investments are based on sound conservation logic such as a direct link to protecting habitat and/or wildlife populations. To receive AWC capital, investees must agree to a set of 'conservation covenants' that hold the investee to conservation-friendly behaviours.

Following a first successful round of fund raising and investment, AWC targeted Uganda, Kenya and Tanzania for a second investment in the form of a Conservation Bond which closed at a value of \$4 million. The Conservation Bond is a distinct legal company with a limited number of note holders and a specified life span of 7-10 years. The bond comprises of individual loans from investors of \$250,000 and above that are collected over a 24 month draw-down period.

With a minimum investment level of \$500,000, the maximum number of enterprises that could receive AWC support was eight. However, depending on the enterprise in question, and in particular the prospective economic, social, and conservation benefits to be realized from an investment, the \$4 million available through Conservation Bond 2 could be directed to fewer enterprises.

The first approved investment was in a high-end, nature travel business, Asilia currently operating 13 camps and lodges. The \$1.5 million investment was to advance Asilia's four-year expansion goals to help them scale up their

operation from 13 to 23 lodges by 2018.

The second approved investment was a \$1.2 million loan to African Forest Lodges. In a first-of-its-kind partnership with the Kenya Forest Service, Africa Forest Lodges has been awarded a tourism development concession to construct two new lodges (130 beds) in Kenya's national forests and build a Forest Experience Park with adventure tourism activities. The three facilities would create 130 jobs, and generate annual revenue of \$128,000 in conservation fees for the Kenya Forest Service. They would also include a revenue sharing mechanism with local conservation trust funds anticipated to generate \$132,000 annually. These revenue sharing mechanisms would provide a sustainable funding source for conservation efforts in these critically important national forests.

New innovative sources of funds are vital to meet the challenge that a growing population puts on the available natural resources which in turn provides the foundation for many African economies from biodiversity-related products and services in the agriculture, fisheries, forestry, tourism and energy sectors.

The government of Uganda, for one, estimates that the financing gap for biodiversity conservation in the country stands at \$455 million per year. Only by attracting new sources of finance will such gaps be filled. ●

The House Crow

Tackling a voracious pest

COLIN JACKSON



works with
A Rocha
Kenya in
Watamu

Anyone visiting Kenyan coastal towns or hotels cannot avoid noticing the large number of noisy black birds frequenting piles of rubbish, congregating on telephone wires, chasing chickens and also very likely stealing food off your plate in the restaurant.

Welcome to our most abundant resident, the House Crow or *Corvus splendens* (formerly the 'Indian House Crow') which is a member of the family Corvidae, but an alien species of crow to Africa.

In Kenya we have six species of indigenous crow, but only one on the coast, the black-and-white Pied Crow (*Corvus albus*), which is also commonly found alongside the House Crow but in far fewer numbers.

The House Crow is indigenous to the Indian sub-continent and was introduced to East Africa first in Zanzibar in 1891, initially as a form of 'pollution control for rubbish dumps, but by 1917 was rated as a pest with a bounty awarded for any dead crow or egg brought in.

The crow later spread to mainland Africa and up to Mombasa where it was first recorded in 1947. From there it spread north and south

becoming 'common' in Malindi in the late 1980s and is now in all the coastal towns and inland as far as Voi.

There is now even a small population recently established in Makindu, some 280 kilometres inland, and unconfirmed reports of it being in Machakos. It has become a serious pest in many places in Africa from Cape Town to Djibouti.

Like so many introduced alien animals and plants worldwide, it has been extremely successful, proliferating into the large numbers of birds that can be seen today -- counts as much as five years ago in Malindi reached 5,000 birds; Mombasa probably has a population of several hundred thousand and in 2009 the population in Tanzania was estimated at over one million.

VORACIOUS PREDATORS

As with most alien, introduced species, the House Crow has created a number of problems both in the natural ecosystems and for human communities. One can argue that the crows feed



PHOTO BY: PETER USHER



PHOTOS BY: LISSA RUBEN

on the organic rubbish discarded by people and therefore perform an important cleaning job without which the trash problem would be far worse. This is of course true within limits, but in fact the problems far outweigh the advantages of this:

- The House Crow is an extremely voracious bird preying on other small (indigenous) birds' nests, eating the eggs and young and destroying the nest. As well as direct predation, they will also specifically harass and mob a wide variety of birds for no apparent reason other than to cause distress. I have personally seen a House Crow chase a Crab-plover off the beach in Watamu and continue to mob it for 2-300

TOP LEFT AND BELOW LEFT: Crows like to feed on rubbish and can be seen here in Malindi town rummaging through heaps of garbage.

TOP RIGHT: A crow perched on a log.

AS WITH MOST ALIEN, INTRODUCED SPECIES, THE HOUSE CROW HAS CREATED A NUMBER OF PROBLEMS BOTH IN THE NATURAL ECOSYSTEMS AND FOR HUMAN COMMUNITIES.

metres across the water. This behaviour has led to a decline in the diversity of indigenous bird species where crows occur.

- House Crows predate on small reptiles and mammals thus reducing the wider biodiversity in areas where they are found.
- House Crows cause direct and severe losses to agriculture and animal husbandry, taking eggs and chicks of free-range poultry, attacking new-born kids and calves, and feeding on germinating maize, sorghum and other crops. Crows are extremely effective predators and will even work in teams -- one to distract the adult chicken while another will snatch one of the now unguarded chicks. People along the Kenya coast have lost significant sums of money investing in chicken farming only to have them annihilated by House Crows. Villagers have also said that they are afraid to leave their small children unattended outside for fear of attack by aggressive House Crows.
- Being a natural scavenger and 'thief', House Crows are particularly effective at stealing food from stalls and even from customers' plates in restaurants and hotels.
- A significant proportion of House Crows diet is human-generated rubbish, which is often carried some distance from the rubbish dump to eat. This spreading of decomposing rubbish clearly increases the risk of spreading disease. Furthermore, below the regular roosting and breeding sites considerable 'guano' can build up from the droppings -- which if in an urban area can also cause pollution and risk of disease for

humans. House Crows have in fact been shown to be carriers of up to eight human parasites. Crows also make a lot of noise -- which for many can be significant 'noise pollution'.

Over the last 25 years considerable experience has been gained from House Crow control programmes in Djibouti, Malindi, Mombasa and Zanzibar. In Zanzibar, trapping and a carefully supervised poisoning using a specialised avicide, a poison specifically designed for birds, reduced the House Crow population in Zanzibar town by 95 per cent, and over the whole island by 75-80 per cent in five years.

Crow traps can indeed be very effective (between 2011 and 2013 some 1,580 crows were caught and killed in traps in Watamu), however they are very labour intensive, require constant supervision and maintenance and also regularly trap birds of prey such as African Goshawks (*Accipiter tachiro*) attracted into the trap by the ready feast of crows.

EFFECTIVE POISONING

Other methods have also been employed with varying success -- pricking (and therefore killing) eggs, paying a bounty for every crow or egg brought in by members of the public, and even direct shooting of crows. While these all can work to a certain extent, really only the poisoning has been proved to be at effective on a large scale.

Poisons, quite rightly, raise a lot of concern for anyone aware of conservation issues in that they are directly to blame for the extreme crash of many raptor populations and in particular our vultures. However, the poison used, *Starlicide*, was first produced in the United States specifically to control European Starlings (*Sturnus vulgaris*) where they are a major introduced alien pest. As poisons go, it is particularly 'safe' as it only affects the bird eating it directly (anything eating the dead bird is



PHOTOS BY: LISSA RUBEN

TOP: Crows are known to descend from trees and buildings and snatch food from humans.

BELOW: Crows at Malindi Marine Park.

unaffected as the poison metabolises very fast).

Furthermore, the way in which it is used means that extreme care is taken to ensure that only House Crows take the poisoned bait through careful observation and monitoring of poisoned bait by a trained poisoner. Any other species of bird or animal such as dogs *et cetera* that might look interested in eating it are immediately chased off -- but in fact, House Crows are so voracious anyway that they effectively out-compete anything else from taking the bait.

The same poison was used in a poisoning programme in Watamu and Malindi between 1999 and 2005 coordinated locally by A Rocha Kenya, a conservation organisation based in Watamu, with support from Turtle Bay Beach Club and the Driftwood Club together with the Malindi Green Town Movement, Malindi Museum Society and other local hotels. It was a very low-level programme, but which within a year had reduced crow populations to a mere five or six birds in Watamu and 30-40 in Malindi.

North and south of Mombasa, by contrast, successful initial control work carried out in the 1990s was not followed up and the pest has re-established itself.





In many areas where it has been introduced, the house crow is considered to be an invasive species, and causes damage to crops and native wildlife.

FACT FILE

The scientific name of the house crow, *Corvus splendens*, means 'shining raven', and refers to the bird's glossy black feathers. The house crow is widely distributed in southern Asia, but has been introduced to parts of Africa, the Middle East and Europe.

CROW ERADICATION MAKES ECONOMIC SENSE

In 2005, however, the Pest Control Products Board disallowed further importation of the poison due to the correct procedures not having been carried out to register it officially in the country, which, to be fair does make sense. However, there has been little obvious will from the government to support and facilitate any attempt to regularise the importation of the poison and careful monitoring of its use.

Reducing House Crow populations provides great economic and conservation benefits, and control techniques are now well understood and highly effective. In Tanzania a full on crow eradication programme has been in operation since 2010 and well over half a million House Crows have successfully been killed.

However, a concerted and well-coordinated push is required using all means possible in all locations where House Crows occur in order to eradicate them. Indeed, poison is really only effective for large numbers of crows -- when you get down to only a handful remaining, probably putting a handsome bounty on the head of each crow and spreading the word

among the local *vijana* (youth) would be the most effective way of eliminating the last few.

House Crows are a voracious and aggressive pest that directly and significantly impact both local indigenous biodiversity and humans. One thing is certain, that if the menace is not rapidly met head on and dealt with very soon in Kenya, House Crows will be found in Nairobi where, with the prolific levels of organic waste left open in a multitude of locations, they will rapidly increase in number and will be effectively be impossible to control, let alone get rid of.

A focussed, concerted effort should immediately be made, led by Kenya Wildlife Service whose remit is to protect our indigenous biodiversity, to eliminate crows from all inland sites using direct control methods while pushing the process of getting *Starlicide* registered with the Pest Control Products Board. Thereafter a tightly controlled programme of poisoning should take place at all major urban centres along the Kenyan coast.

Only in this way do we have any hope of seeing a return of our local wildlife and of protecting the livelihoods of hundreds (and likely thousands) of Kenyans who currently are struggling under the 'curse of the black crow'. ●

Ringling at Ngulia to map avian migration

BY RUPERT WATSON



A naturalist, author and lawyer who has lived in Kenya for more than 30 years.



ALL PHOTOGRAPHS BY PETER USHER

BIODIVERSITY

Soon after Ngulia Lodge opened on the edge of an escarpment in Tsavo West National Park, in 1969, ornithologists discovered that a combination of moonless nights, midnight mist and bright lodge lights, attracted migrating birds down to ground level.

It was December, and these were southward-bound migrants from Eurasia, and for the bird people, there was only one obvious next step -- catch as many as possible, and put rings on their legs to try and learn more about where they had come from, where they were going, and how they got there.

Ringling quickly started in earnest and 48 years later, with on-going help from Kenya Wildlife Service and the Ngulia Lodge, still continues. Today, the dramatic edge of the escarpment still remains the premier site for ringing Eurasian (or more accurately "Palearctic") migrants on their way through Africa.

Never having had the privilege of witnessing this programme in action, I introduced myself to the organisers at the Ornithology Department of the Nairobi Museum, and made the necessary bookings. Then at the end of last year I set off to see what happened, in the hope that at least on balance I could be more of a help than a hindrance.

My first evening there I met up with the dramatis personae involved, and a collection of more committed individuals it is hard to imagine. The group was headed by revolving representatives from Nature Kenya and the Museum, all of whom had put their hands in their own pockets to be down there, and towards the end of the month, the reassuring skills of Colin Jackson from A Rocha, the international network of environmental organizations, were added to the pot.



LEFT PAGE: Basra Reed Warblers have probably flown from the marshes of southern Iraq.

TOP: Bagging up ringed birds ready for release.

BELOW: Ngulia Lodge.

The Kenyans were joined by a core of such as Ian, Phil and Martin from England, Niko and Nicole from Germany and Julia from Russia, all of whom had paid their travel and accommodation, as well as using their own holiday allowance for the fascination of birds, a desire to contribute to original research and surely a love of Kenya too.

TRAP AND RING

Being untrained in any ringing skills, I would have to begin by spectating, but spectating what? With good mist and bright lights, several hundred birds a night may cannon into the nets sited close to the lodge -- actually just beyond the tree where a goat leg attracts a leopard in the early evenings. From these they are extracted, with remarkable lack of difficulty if your hands are trained and careful, and then placed gently into a cotton bag. Most of the birds are small -- warbler or



Mist coming down on the hills - could be a good night for ringing.

Bird ringing or bird banding is the attachment of a small, individually numbered metal or plastic tag to the leg or wing of a wild bird to enable individual identification. This helps in keeping track of the movements of the bird and its life history.

nightingale size -- and two or three go into a bag, handfuls of which then need carrying up to the ringing tables inside on the hotel veranda.

There, each bird is identified and measured, before special pliers close a ring onto its leg. As this continues, the two or three ringers are each continually dictating to the table's scribe details of identification, age, maybe sex if this is ascertainable, weight (established for the smaller birds by turning them head first into a film canister on little scales), wing length and the state of flight feather moult. After assessment, each bird is placed into a larger bag, and when this has a good few in it, the contents are released gently back into the night. (In the daytime, the process is simpler, with freshly ringed and recorded birds being released straight into the air by the ringer.)

With a good mist and little moon, ringing activity might start by midnight or even earlier, and continue through to near dawn. Then little more than half an hour later, as the sun rises up over the vast plains below, it is time to open more extensive morning nets to catch the birds that dropped into the bushes during the night.

This involves all available person-power with the same routine except that the area of net to be monitored is much greater as can be the number of birds.

Morning ringing might go on until 10 o'clock or even later if there are plenty of helpers, all of which plays havoc with the body clock, especially if one is trying to fit in a couple of hours out in the park in the afternoon. One night we had very little mist and so did almost no night or sunrise ringing. This gave a chance to try and catch some migrating Barn Swallows in mid-morning. Swallow nets are set higher, and the birds' long pointed wings are less prone to getting entangled in the mesh, making them a good bird for beginners to work on extracting.

With guidance from Colin Jackson, I was taught first to lift the mesh gently over a bird's head and once this was free, to slowly unhook its legs and claws -- something for which one of my colleagues actually kept a fingernail uncut. I was also taught to avoid wearing shirts with buttons, which can take just as much unhooking from the mesh as passerine feet!

So much for the process, but what is the point? When Johann Frisch tied red thread round the legs of German swallows their return the following year, thread intact, demonstrated with near certainty, the homing abilities of the birds. To those who were aware of his experiment in the mid 1750s, the intact thread laid another ghost to rest. It dispelled any lingering doubts as to

WITH A GOOD MIST AND LITTLE MOON, RINGING ACTIVITY MIGHT START BY MIDNIGHT OR EVEN EARLIER, AND CONTINUE THROUGH TO NEAR DAWN.



whether, when birds disappeared in late summer, it was to winter underwater, or otherwise metamorphose into some unrecognisable form in which they passed the cold, leafless northern months undetected. Since then ringing techniques have improved enormously to enable detailed investigations into bird movements and much more.

HALF A MILLION BIRDS RINGED

I think there were three main practical aims, each of which contributes to a greater understanding of any particular species. First, netting birds gives an idea of the species composition of the passing migrants. Since its inception, the programme has ringed well over half a million birds, most of them small, inconspicuous species and unlikely to fill any casual observer's binoculars -- and even if they do will be extremely difficult to identify in the field. One species has even been added to the Kenyan list as a result of appearing in the nets -- Savi's Warbler, of which one was ringed in 1975 and another in 1986.

The composition of the catch is fascinating and I defy anyone to imagine the most-netted birds at Ngulia. Looking at figures for 1969–2012, during which almost exactly half a million birds were ringed, over 40 per cent of these were Marsh Warblers, with Sprossers and Common Whitethroats a close second and third at around 20 per cent each. So the percentages remain today.

These are followed far behind in descending order by Barn Swallows (mostly daytime ringed), River Warblers, Iranias, Willow Warblers, Red-backed and Isabelline Shrikes, then a host of



TOP: A Common Whitethroat ready for release.

BELOW: Marsh Warblers are the birds most netted at Ngulia.

500,000

The number of birds ringed at Ngulia between 1969 and 2012.

other warblers, Barred, Garden, Olive-tree, Olivaceous and Basra Reed.

In total, over 60 different species of Palearctic migrants have found themselves in the Ngulia nets, nearly 15 of these only once or twice (e.g. Eleonora's Falcon, Levant Sparrowhawk and Great Snipe). Assuming a consistent programme, comparing these species compositions over the years enables assessments of general population trends. Also important is the age composition of different species, most of which break down into roughly two thirds first year birds and one third older ones. Monitoring these allows for estimates of both breeding success and survival.

The second aim is to catch birds which someone else, somewhere else has already caught and ringed. In the 2016 two-week session, there were three such recoveries, a Sprosser ringed in Sweden and two Marsh Warblers, one previously caught in Germany and the other in the Czech Republic. The third hope is that birds ringed in Ngulia will be netted or otherwise identified elsewhere -- although recoveries may also be of dead birds. Occasionally details of rings on the legs of larger birds can be read through binoculars -- often the case with waders pecking around on the seashore.





Afrotropical species like this Harlequin Quail are often caught in daytime nets.

SWALLOWS FROM ASIA OVERFLY TSAVO

This practical data of numbers ringed and recovered can contribute to a much deeper knowledge of life, behaviour, longevity, migration routes and thus conservation. So it seems that most of the Ngulia birds have stopped off in Ethiopia for some weeks to gather up energy for the rest of their southward journey.

This is invaluable information, particularly if translated into a heightened degree of protection for identified stop-over areas. Of over 25,000 swallows ringed, none has been recovered in Europe -- nor have any Red-backed Shrikes -- suggesting that all the swallows overflying Tsavo derive from Asian populations. It is no surprise that the Chokpak ringing station in Kazakhstan has so far netted four Barn Swallows ringed in Ngulia. The Sprossers and Marsh Warblers on the other hand are recovered far and wide, showing their numbers to come from a broad breeding range.

On the nights I was there, the three main species dominated the catches, but spiced up by a Eurasian Nightjar, Eurasian Scops Owl, two Gambaga Flycatchers and a nocturnal Wattled Starling. Daytime visitors to the nets often include Afrotropical species, in this case, Jacobin Cuckoos,

Jameson's Firefinch and Common Buttonquail.

So how does a helper shift gear from spectator to participant? Extracting birds from nets at night is not for the beginner; but once netters have accumulated a few bags, they need relieving of these and the birds taken up to the ringers; this can be accomplished by anyone willing to act as porter, as can resupplying fresh bags. Moving up to the next level of help is learning to scribe -- taking down the notes of rings and birds. This is a critical skill but mastered more quickly than the actual extracting or ringing, as is releasing ringed birds into the night.

Actually there is something deeply humbling in handling these tiny creatures, which have travelled so far, and may have much farther to go. I pick a first year Basra Reed Warbler out of the bag and cradle it in my palm, thinking "Where you were hatched is no secret - surely the marshes of the troubled lands of southern Iraq. From there you crossed the desert wastes of Saudi Arabia, perhaps resting up in the Ethiopian highlands before heading for Tsavo. Trapping, handling and ringing must have been traumatic, but if that helps protect your descendants, surely worth it. Here, go well into the night, you wonderful creature". ●

Playing Midwife to Critically Endangered Turtles at Christmas



BY LIZ MWAMBUI
is a communications specialist. She currently provides communications consultancy services for environmental non-profits and social enterprises.

INSERT: The endangered Seychelles magpie robin.

I saw the bird even before I heard the telltale sounds of dirt striking foliage. I knew a sea turtle was inside the vegetation that stands between the beach and the path, which runs around this side of the island.

The bird was a Seychelles magpie robin and the sea turtle, the hawksbill (*Eretmochelys imbricata*). The bird, drawn by the promise of termites and worms exposed by the digging turtle, was waiting on a branch above the reptile. They made a photogenic pair, and had the turtle not been facing me and at risk of being distracted by my presence, I would have indulged my shutterbug impulse and taken a picture.

It is Christmas Day and this is my first turtle today. The tide was just right and I expected

more encounters. But for the moment I had to attend to this one, before I moved on towards the rest of the beach. If she prepares an egg chamber and lays, I would collect her data including her identification tags,

carapace measurements and number of eggs. If she's unsatisfied with the spot she picked and decides to head back to the sea, I would intercept her and read her tags -- evidence that she had been on the beach, even though she didn't nest.

All this information would enlarge the long-term dataset collected since 1972 for this species on Cousin Island Special Reserve in the



Every year between September and March, female Hawksbill turtles crawl up Cousin Island beaches to nest





PHOTO BY: DAILUS LAWRENCE

Seychelles. This is the most important nesting site for the Critically Endangered hawksbill in the Western Indian Ocean, and a proven success story in sea turtle conservation. I am on Cousin to volunteer on its sea turtle monitoring programme.

There are no words to describe the feeling of being next to a nesting turtle. One pitch black night the previous week, as a lone star made the effort to provide light with the help of a little bioluminescent plankton in the sand, I attempted to describe the magic of it all to my sister by way of a *whatsapp* message.

At a distance from the turtle and hiding the bright light of my phone, lest I confuse the turtle, I told her this: Imagine a very still night broken only by whispering Casaurina trees and breaking waves. The birds are at rest, their calls silenced by the night. The wedge-tailed shearwaters might be a-stir in their burrows on the hill, but down here on the beach their desolate and haunting call cannot be heard. In the forest's leaf litter, lizards slither past. Ghost crabs vibrate their front claws in the sand; hermit crabs sniff you out with their antennae.

TOP: During laying, the females enter a trance-like state and they can be safely approached for data collection.

RIGHT: Once she finds a suitable spot, the female will dig an egg chamber and lay her eggs.



PHOTO BY: CHERYL SANCHEZ

EGG-LAYING STARTS

There you sit, one of ten people on the island, with stretches of beach and endless ocean your temporary kingdom. You hear the steady thud of flippers hitting the ground and pushing sand out of the way. Thirty minutes may pass, maybe more. Eventually the flippers will stop, there will be silence and you'll know egg-laying has started.

But as it is daytime on this Christmas day, I have the advantage of sight and I can see the turtle; her flippers are at rest, readying her to deposit her precious load into the earth.



PHOTO BY: LIZ MWAMBUI

I wait for her to enter into a characteristic trance-like state before proceeding with my data collection. She has chosen a spot where a few days ago, the branches of a *Pisonia* tree uprooted by a storm fell onto a laying hawksbill turtle, which was happily unharmed. I look warily at the rest of the trees -- they are reassuringly steady.

Just short of a metre at 92cm in length and 81cm in width, the turtle is strikingly beautiful. She has a gorgeous olive-brown shell. The shells were the cause of this species decline in the past, as people hunted them worldwide to collect highly valuable carapaces used to make jewellery and such items as combs and spectacle frames.

Since 1994, Seychelles law prohibits the harvesting and commercial trade in all turtles, while the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) bans international trade in all sea turtles

After two months, hatchlings begin to emerge from nests and to head down the beaches to the sea.

and their products.

From her metal tags, applied previously on this island, I later confirm that she has been here 3 times already this season. She might come back a fourth and fifth time.

The pristine environment of Cousin Island still provides suitable grounds for nesting turtles. Scientists in 2010 recorded an 8-fold increase in annual nesting numbers since the turtle programme was started in 1972.

The island is managed by Nature Seychelles, a leading not-for-profit conservation organisation and the BirdLife Partner in Seychelles. Previously a coconut plantation, the island was purchased by BirdLife in 1968 to save the Seychelles warbler from

1994

Year Seychelles law prohibited the harvesting and commercial trade in all turtles, while the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) bans international trade in all sea turtles and their products.

JUST SHORT OF A METRE AT 92CM IN LENGTH AND 81CM IN WIDTH, THE TURTLE IS STRIKINGLY BEAUTIFUL.



PHOTO BY: CHERYL SANCHEZ



PHOTOS BY: LIZ MWAMBEU



extinction. Efforts to save that and other endemic bird species have turned Cousin into a thriving home for varied wildlife including Aldabra Giant tortoises, endemic skinks and geckos, and thousands of nesting seabirds.

Around its 27-hectare area, Nature Seychelles science staff have demarcated beaches used by the hawksbill to help in monitoring turtle emergencies and nesting.

THE HUMMINGBIRD TALE

I enter the latest nest number into my monitoring sheet and the beach where it is located. As I watch the turtle conceal her nest and head back to sea, I marvel at how lucky I am to be here, doing something worthwhile for one of the species that shares this planet with me.

My heroine, Nobel Peace Prize Laureate and environmental activist, the late Wangari Maathai, once told this story about the Hummingbird. It is about a forest that is being consumed by

About Cousin Island

- Cousin is a 27ha granitic island located 2 km west of Praslin Island in the Republic of Seychelles.
- It is a special reserve under Seychelles law and an IUCN Protected Area Category 1a, which is a strict nature reserve where people's visits and their impacts are controlled to ensure protection of the conservation values.
- A designated Important Bird Area (IBA) - an area recognized as being of global importance for the conservation of birds - it is one of the sites of highest ornithological interest in Seychelles.
- Self-financed through eco-tourism, the island is open to visitors Monday to Friday excluding Public Holidays, from 10.00am - 12.30pm.
- Visits to Cousin are undertaken by local tour operators on Praslin. A contact list is available on: <http://cousinisland.net/visit/how-to-get-there>
- To take part in Cousin Island's exciting new programme - 'The Conservation Boot Camp', send enquiries to: nature@seychelles.net



PHOTO BY: MARTIN HARVEY

TOP LEFT: Seychelles supports one of the healthiest populations of Hawksbill turtles in the world.

MIDDLE: A hawksbill turtle lays her eggs.

BOTTOM: This hatchling makes a dash for the sea.

RIGHT: Cousin Island Special Reserve.

a great fire. As other animals watch, including much bigger animals like elephants with their big trunks, the Hummingbird flies to the nearest stream and takes a drop of water. Up and down and back and forth it goes, as fast as it can. The other animals say to the Hummingbird, "what do you think you can do? You are too little. This fire is too big. Your wings are too little and your beak is so small that you can only bring a small drop of water at a time." The Hummingbird answers, "I am doing the best that I can." She concludes by saying, "And that is always what all of us should. We should always be like a Hummingbird."

In the face of overwhelmingly pessimistic news about the loss of species in Africa and the world, there's still something each one of us can do. I came to Cousin Island as a layperson who was given the opportunity to help. This past Christmas, I am happy to say, I was a Hummingbird. ●

Eddie's Exploits



JULIA FULCHER

was born and raised in Kenya, while schooled in Kenya and England.

(This is the third and last article in a sequel on the growth of Eddie, a juvenile African Crowned Eagle at Rondo Retreat in western Kenya. The first article appeared in the July-September 2016 issue of Swara, while the second part was published in the January-March 2017 edition.)

It is December and I am back at Rondo, camera at the ready, to catch up on news of Eddie's exploits. Gender as yet undetermined (it could be Prince Edward or Princess Edith, but I will stick to "he" for simplicity's sake), the juvenile African Crowned Eagle, born and raised in the garden at Rondo Retreat, is now a year old.

Huge, well built, strong and striking and still sporting his juvenile colours -- the royal youngster can fly with ease. No more teetering on the edge and plucking up courage before take-off.

Eddie is less in evidence now, presumably out trying to fend for himself. His constant shriek for food is heard less frequently, but he can still tell when mother is coming with food and he sets up a hue and a cry! Yes, even now mother still delivers delicacies. There have been telltale signs of what is on the menu for the day: Colobus, Blue and Red tails and other less identifiable treats -- the head of a rodent of huge proportions (things grow larger in the forest) and as a special for the Christmas season: Potto! Previously I had only ever heard of these nocturnal creatures, somewhat akin to Bush Babies, and then one day Eddie is treated to this sumptuous fare, and I get my first peek.

On 23rd December, mother started calling en route to the former nesting tree, where Eddie was shrieking frantically. He received his prize with his usual relish, grabbing it without decorum, shouting feverishly as he hooded it. He flew his meal to another tree, where I spied the Potto, before continuing to his 'dining tree'. Fur flew as he tucked into this treat, demolishing every last bit - bones and all, eating for most of the day. Boy, did his crop bulge following such a fine feast! I call this Eddie's Potto belly -- rather than pot belly!

He then cleaned and sharpened his beak on a branch, remaining immobile for a good hour or two, while digesting the meal. He continued snacking at half-past five and an hour later he was on the same limb, but hanging up-side-down, doing his aerobics, then quickly righting himself and flying off for the night. Perhaps the aerobics routine strengthens his muscles, or is a means of



TOP AND BELOW: Eddie's aerobics routine.

getting at these smaller creatures, such as Pottos, sleeping in tree hollows.

Interestingly the crop found in raptors, is a catch-all, where all the non-digestible bits of a meal -- bones and fur -- are caught and some hours later are regurgitated, all nicely fur-lined! There was evidence of this under the nest when mother was in residence.

MOMENTS OF RECREATION

On one food drop in early December, both mother and son plummeted to the ground, perhaps as they both had their talons embedded in the catch of the day, or possibly when our impetuous youth, in his excitement, knocked his mother off her perch. This must have been rather disconcerting for mother, because as soon as she could disengage, she was off in such a hurry that she flew right through the nearest open sitting room

HUGE, WELL BUILT, STRONG AND STRIKING AND STILL SPORTING HIS JUVENILE COLOURS -- THE ROYAL YOUNGSTER CAN FLY WITH EASE.



Eddie has had to figure out the hunting business by himself. He can be seen sitting in a tree surrounded by monkeys, as if wondering how to net one. He makes an almost inaudible call, but singing for his supper does not work. The monkeys cavort carefully, just out of reach.

Perched in a tree in early December, he spotted monkeys nearby. He flew like a shot, having selected a victim. The monkeys dispersed in all directions. The target jumped from tree to tree, spiralling downwards between the two trees, trying to throw off his pursuer, until both of them ended up in the undergrowth. Moments later Eddie gave up this seemingly fruitless situation and flew off. Later the gardeners saw the monkey walking gingerly. He had escaped death, but not without injury. A few days later he was eating in our guava tree, the gashes inflicted by Eddie's talon quite visible. Thereafter he sought refuge in a hedge. We plied him with ripe figs -- a favourite for monkeys -- which he polished off while gazing frequently and fearfully above, no doubt looking out for the fearsome predator. His was the lucky escape! The wounds, though nasty, should heal in time.

GAINING SKILL

Undeterred, Eddie tried again, flying purposefully towards a tree full of monkeys. The alarm was sounded, monkeys fled but Eddie grabbed one mid-air. Both careened to the ground. A couple of other monkeys shouted and jumped menacingly from both sides, disconcerting Eddie and causing him to leave his first witnessed kill untouched. The poor thing flew off, chased by a Colobus!



Crowned eagles have wingspans of 180cm making them one of the largest eagles in Africa. As with most birds of prey, females are larger than males. Their favourite prey is primates, and mated pairs will sometimes hunt co-operatively.

Scientific name:

Stephanoaetus coronatus

window and out the other side. A passing room steward had to drop to the ground to avoid a collision. Previously we had only witnessed Eddie chase after fallen food (usually tails). Perhaps this aggressive behavior indicates that our youngster is a male...

While Eddie's life seems to revolve around finding or eating food, there are moments for recreation. I happened upon him taking a dip in the stream near the fish pond. The forest can be warm in January, so he definitely had the right idea of cooling his heels. He emerged somewhat bedraggled and muddy.

On another stroll by the stream, I heard a 'thwack, thwack' sound directly in front of me. Eddie was heading straight for me. He must have been enjoying a paddle when I disturbed him. With wings propelling him on and up, and chunky legs dangling below, this great bird was gaining altitude steadily, with me directly in his flight path. In the seconds it took, I noticed that his talons were drawn together, and not spread in an attack position, thankfully, as they are lethal weapons. He had a bit of clearance over my head, but all the same I crouched and watched him propel himself overhead. A fabulously close encounter indeed!



LEFT PAGE: Potto is on the menu for the day.

TOP: Mother flies in a feast for Eddie.

INSERT: Injured Blue keeps a lookout for danger.

Evening was drawing in and we suspect that another forest creature enjoyed a freebie feast that night. Foiled again!

Gaining in skill and confidence, Eddie tried his hand at hunting once again on 19th January 2017. He had a marvelous bird's-eye view of Blues at play over the Rondo Reception roof-top. Choosing his moment, he flew swiftly and silently, straight as a shot. The lookout monkey shouted a warning and the troop scattered, not knowing the direction of the danger. Just as one Blue jumped from limb to limb, Eddie went for the jugular with both sets of talons. Tumbling to the ground, Eddie spread his wings over his kill. The other monkeys tried to scare him away, but this time he was undaunted.

Holding firmly to his trophy, he flapped his wings menacingly, raising his crown, and the monkeys left. We were proud of Eddie's accomplishment, but sadly this perfectly executed execution (forgive the pun) happened just at nightfall; moments later he was forced to abandon his prey and seek shelter in the nearby Terminalia tree, leaving the Blue 'lying in state' below.

Jackals made off with this bounty under the cover of darkness. Morning found Eddie in

mourning. He sat for hours in the tree bemoaning his loss and this great injustice. The following day mother mercifully flew in some food.

Eddie himself had a lucky escape recently. Raphael, a gardener, heard some noise in the forest undergrowth and discovered Eddie surrounded by four baboons. He was putting up some stiff resistance, but he was out-numbered. Raphael came just in time to scare off the baboons, one of which had grabbed Eddie's wing. This altercation with the baboons would not be the last. Days later Eddie was spotted on a limb with more menacing baboons, but this time he was not backing down; he had a score to settle! Advancing with wings flapping, he managed to strike one with his razor-sharp talons, sending the shrieking baboons packing. They now have a healthy fear of our young royal, giving the garden a wide berth.

Through trial and error, Eddie is making headway as a hunter. Now, at last, he knows that he must kill early enough in the day to enjoy the feast. We see much less of him at Rondo as he enjoys his new found independence scouring the forest. Adieu and all the best! I, for one, will miss him. ●

An Argentine Perspective on Illegal Grazing



**SANTIAGO
LEGARRE**

Santiago Legarre is a visiting lecturer from Argentina, teaching at Strathmore Law School in Nairobi.

A couple of months ago I visited Kenya's Samburu National Reserve for the third year in a row, and for the third consecutive time I enjoyed the famous hospitality of the staff at the Samburu Game Lodge, the first lodge established there, right where the white hunters of old used to set their camp.

I found something new, however, in this my third visit to the Reserve; something disturbing!

As I was relaxing one Saturday afternoon on the balcony of the great lodge, I spotted on the other side of the Ewaso Ng'iro River [within the confines of the neighboring Buffalo Springs Reserve] a massive herd of whitish animals heading west. At first I thought they might be Oryx, but the relatively small size indicated otherwise. When I saw a man walking in their midst, holding something long with one of his

hands the doubts vanished: I had seen this before: this man was a grazer.

A few minutes later I exchanged a few words with a Samburu driver who works in the reserve: "Well, the land in the reserve is ours", he said. "So why shouldn't we graze there in times of drought?"

Nevertheless, when I pressed him he conceded that bringing cattle and goats into the reserve was illegal. He even shared with me that his fellow tribesmen had been emboldened by promises of politicians coupled with the provision of AK-47s, carried by the herdsmen just in case they might be challenged by Pokots, Boranas or other "enemies". "Don't worry", he added, "you are a foreigner so you are out of bounds: they wouldn't shoot you".

When I inquired after the rangers' attitude in the face of this invasion he was blunt: "Most rangers are either relatives of the herdsmen or sometimes the very owners of the goats: what do you expect them to do?"

In my previous visit to Kenya, in 2015, I had witnessed the problem of illegal grazing in Ol Ari Nyro, not far from Samburu land. The unintended side-effect of the Pokot bringing cattle into that wonderful conservancy in Laikipia was that in a matter of months many of the wild animals [including some of those most cherished

IN MY PREVIOUS VISIT TO KENYA, IN 2015, I HAD WITNESSED THE PROBLEM OF ILLEGAL GRAZING IN OL ARI NYRO, NOT FAR FROM SAMBURU LAND.





MAIN PHOTO: Huge cattle invasion overwhelms iconic wildlife reserves.

TOP: The author sighting a leopard in Samburu National Reserve.

by the avid, game-seeker tourist] had vanished or been killed -- the typical case of lions being taken out of the picture in order to protect the cows.

As John Doherty, the renowned reticulated giraffe expert based in the Samburu Game Lodge since 2008, explained to me: "It isn't necessary to conduct an experiment in order to know what the effects of illegal grazing here will be. The experiment has been suffered already in other venues."

I know. I have seen it too in places such as Ol Ari Nyro. If the grass is gone, with the grass the game leave too in the search of better grasses; and after them, the cats and other predators. And, while Ol Ari Nyro is now successfully trying to recover [as I was able to witness in my last, very recent visit there], your random reserve (or National Park for that matter) will be turned in

no time into a cattle park.

Indeed in this my third safari to the Samburu National Reserve I had already noticed a very disturbing thing when I spotted those goats that Saturday afternoon. Compared to 2014 and 2015, this time round I saw fewer animals in the reserve -- fewer herbivores and, consequently, fewer cats. This was the first time that no leopard was in sight for three days -- leopard being the all-time reward *par excellence* of the visitor to Samburu. The unexpected sight of those goats [followed by a similar sighting on the Samburu side of the river the next day] gave me a clear clue to the shocking depletion of the game population.

As a self-appointed ambassador of Kenyan beauty in South America, I always need to explain to my countrymen that there is more to Africa than South Africa; and that there is more to Kenya than the Masai Mara. One of my favorite lines when I write for the Argentine press about game watching in East Africa is that in Samburu [and, more generally, in Laikipia] one can see as much as in the Mara, but without the invasive company of cars and people.

I wonder now, with illegal grazing in the northern reserves. My fellow tourists want to see simba (lion) and chui (leopard), not cows. The relevant authorities are still in time to prevent the damage that has already happened elsewhere. Coordinating plans with the local communities is also important and what was achieved in some of the conservancies adjacent to the Mara (most prominently in Mara Naboisho) is promising. Swift action is needed before it is too late. ●





BRIAN FINCH is the author of the sounds component of the recent *Birds of East Africa* Application available on the iTunes Library.

Male Pantala resting: the hitherto unsung hero of this story.

Here be Dragons

As the drought continues to ravage, leaves fall and the yellow dry grass is broken down into the soil, leaving just that. It is in reverie about the halcyon days of greenery, leaves and wild flowers that I pen this latest Paddock Diaries.

The extraordinary variety of dragonflies has never been touched as yet. During the period of the bird and butterfly surveys, over 65 species of Dragonflies have been identified. I must admit that this figure is all dragonflies as I find the damselflies, apart from the Spreadwing (*Lestes*) more than just frustration but an identification nightmare.

Not everything is identified either, as the genera *Orthetrum* and *Trithemis* contain multiple species whose only means of identification is dissection of the male genitalia. So whilst these blue forms are being seen they obviously contain in their ranks impossible to identify lookalikes.

The remarkable concentration of Dragonflies has to be up there amongst the richest environments in the country, this is even more extraordinary for a family whose larvae have to be immersed in water for all of their pre-pupal maturation. BUT the most amazing thing is.... WE HAVE NO WATER!!!

The major attraction in the Paddock for most of these species is long grass; within this habitat are numerous small insect prey which sustains them in large numbers. Other larger species patrol up and down the hedgerows, but these are much less inclined to be found perched and are annoyingly tireless.

Dragonflies are very mobile and can fly long distances, but it would appear that the extent of these

wanderings is not fully appreciated as yet, although the impressive movements of the Globe Skimmer *Pantala flavescens* has been brought to light by an impressive piece of sleuthing.

Pantala are for much of the season the most abundant species we have. The literature will tell you that this species flies for long periods and is only rarely found at rest. Here, their fairly unique vertical resting position is a common sight just below the tip of the grass, other dragonflies rest flat or angled, but the largest species, Hawkers and Emperors and their allies do also rest vertically.....

The Maldives are a small oceanic island group well off the west coast of India, being of volcanic origin there is no standing water. Charles Anderson, an individual with scientific curiosity over several years of visiting the Maldives, was amazed to see very large numbers of *Pantala* in his visits, and just as suddenly they were gone. They obviously could not have been reared on the island with no standing water, and must have come from mainland India, but why?

He also noticed that this was a calendar event, occurring around the same time each year. By investigating dates of appearance and disappearance in India he was able to work out the suggestion of a migration through the sub-continent. This then took him back to the Maldives where the big questions were; why do they come here, and where do they go when the huge swarms just disappear seemingly overnight?.....

In November in East Africa, large swarms of *Pantala* suddenly appear on the coast, this was put down to an emergence from some water body at no



great distance. The numbers then dwindle and these masses move through Africa and spread throughout and this is when the large feeding swarms are a common sight in Nairobi. This appearance (should) coincide with the build up of moisture-laden clouds in late October/ November, and rain falls over a wide area. These temporary water refuges suddenly attract large collections of Pantala, mating takes place and eggs are deposited in the water.

This species will not be found breeding in established wetlands, and is a specialist of small temporary water only. The females are often confused at times, and believe that reflective surfaces are puddles, and this is why at this time of year individuals can be seen trying to lay eggs (whilst in flight) on the polished bonnets of cars, parked or in traffic jams!

FAVOURITE FOOD OF AMUR FALCONS

Whilst there have been successful studies in North America with other species, it has not been possible to radio track a Pantala (yet) but the day will come although I hate to think of the cost that would be involved as their emergence coincides

IN NOVEMBER IN EAST AFRICA, LARGE SWARMS OF PANTALA SUDDENLY APPEAR ON THE COAST, THIS WAS PUT DOWN TO AN EMERGENCE FROM SOME WATER BODY AT NO GREAT DISTANCE.



LEFT: Pantala female shows diagnostic reddish eyes, with very contrasting yellow face bordered in bluish. The Pterostigma is yellow, redder in males.

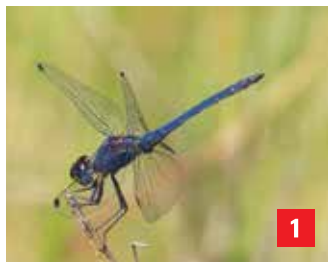
RIGHT: Africa circulation from arrival to departure.

with the huge arrivals of migrant Amur Falcons, that are migrating across the Indian Ocean having come from north of the Himalayas, now arriving in Africa and moving southwards. Pantalas are a favourite food.

What is surmised is that the insects that are raised on temporary water even all through the deserts, continue to move heading southwards where they themselves breed again in the rains in the new year. The progeny then start moving northwards, producing another generation following the East African long rains in March-May until large numbers find themselves on the East African coastline.....

Back to the original researcher who made the Maldives discovery, he now notices that there is a sudden arrival of Pantala back in the Maldives in the northern spring/summer, but they could not have come from India as they have not been seen for six months, and it has been dry.

SOME OTHER DRAGONFLIES PHOTOGRAPHED IN THE PADDOCK



1



2



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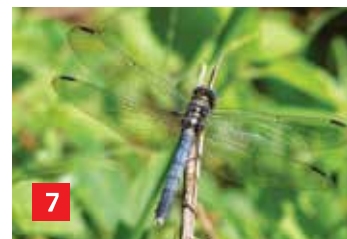
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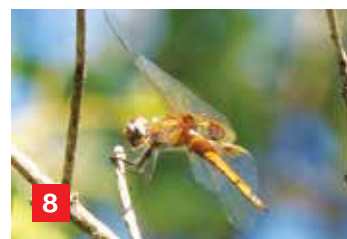
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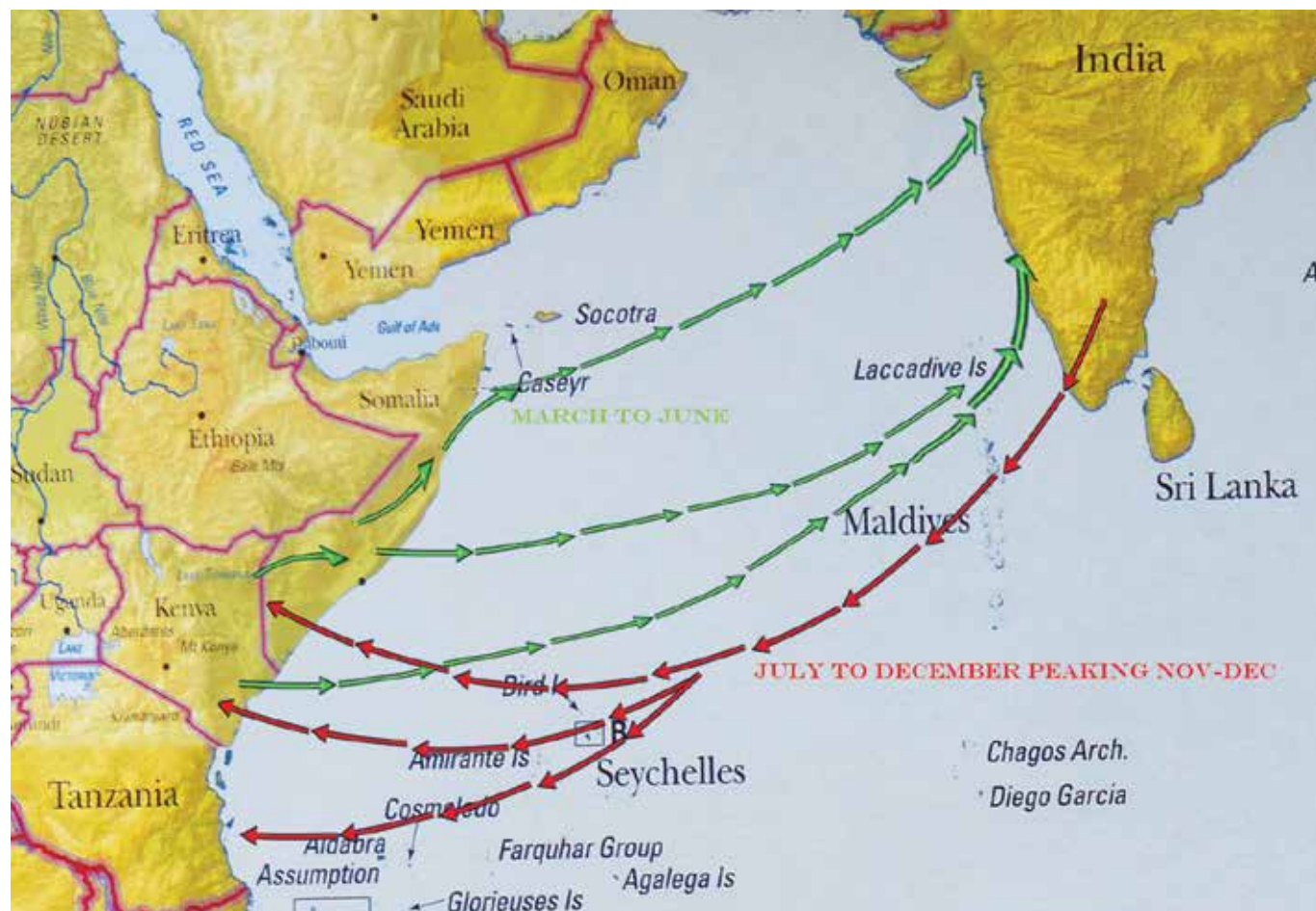
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14

1. Denim Dropwing *Trithemis donaldsoni*
2. Red-veined Dropwing *Trithemis arteriosa*
3. Rusty-tipped Long legs *Notogomphus kilimandjaricus*
4. Broad Scarlet *Crocothemis erythraea* male
5. Yellow-veined Widow *Palpopleura jacunda* male
6. Yellow-veined Widow *Palpopleura jacunda* female
7. Julia Skimmer *Orthetrum julia* male
8. Keyhole Glider *Tramea basilaris*
9. Two-striped Skimmer *Orthetrum cafferum* female
10. Little Duskhawker *Gynacantha manderica*
11. Deceptive Widow *Palpopleura deceptor* male
12. Forest Hawker *Zosteraeschna usambarica*
13. Lucia Widow *Palpopleura lucia* male
14. Black Percher *Diplocodes lefebvreii*

PHOTOS BY: BRIAN FINCH



Seasonal migrations of pantala India-africa back to India.

Dragonflies

They are almost exclusively carnivorous, eating a wide variety of insects ranging from small midges and mosquitoes to butterflies, moths, damselflies, and smaller dragonflies. usually found around lakes, ponds, streams and wetlands because their larvae, known as "nymphs", are aquatic.

RIDING THE CURRENTS OF THE SOMALI JET STREAM

The pieces of the jigsaw are fitting snugly, plotting the dates of swarms from India, Maldives, Seychelles, East African coast, and southern Africa he finds that the appearances prove without any doubt that when the insects disappear from the Maldives, it is because they have continued their long migration across the entire Indian Ocean to make landfall along the East African coastline from where they disperse, and after breeding the next generation continue to spread out, all taking advantage of local rainfalls. He has unearthed the most complex and longest migration of any insect, sending the famous North American Monarch tumbling from the pedestal that it has been secure on for several centuries, its journey has not just been matched but trounced by Pantala.

The individual journey across the Indian Ocean should take nearly a week; countless millions/billions(?) of dragonflies are moving across the water with possibly insect prey caught in the wind currents. At the time they are migrating so are the Amur Falcons in vast numbers as well, and following the same route. Amur Falcons feed on

dragonflies, and whilst they cannot land they can sustain themselves for the long crossing with the mobile picnic lunch for company.

It was found that the migrations from India to Africa, and the return coincide with the Inter Tropical Convergence Zone winds heading west, and the Somali Jet Stream heading east, and all the dragonflies have to do is get to the correct altitude and just ride the currents. But the most incredible thing is that from the African bound insects to the Asian bound insects, there is a span of four generations. How on earth can even the most complex let alone the most primitive instincts trigger off the migratory urge and direction every fourth generation!

The Pantala raised in Africa cross the Indian Ocean, possibly stopping to feed over the Maldives like their predecessors, and coincide with the Asian monsoons, filling the desired temporary water enabling the cycle to start all over again until it is time for their descendants to head off to Africa.

So when you see a swarm of Pantala over the garden in November, just take a moment to marvel at what those same insects have gone through and how far they have come. ●

Explore Kitui



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: Hiking up Muumoni Hills.

BELOW RIGHT: Sign for Tsavo Conservation Area at Mutomo.

BELOW: Christine Kaveke Mwendwe, the county's tourism officer at Ikoo valley 30km from Kitui nd 20 from Mwingo.

Kitui county is about the size of Rwanda," states Khalid Mahmud, chief officer of tourism and natural resources in the county government. That's surprise number one. For the longest time ever, Kitui was off the tourist map.

Mahmud and his vibrant team are putting this little-explored 24,385-square-kilometre parcel of land in Kenya's eastern side on the map.

Surprise number two. Kitui county is full of amazing landscapes, history and hills -- like Rwanda, but minus the mountain gorillas.

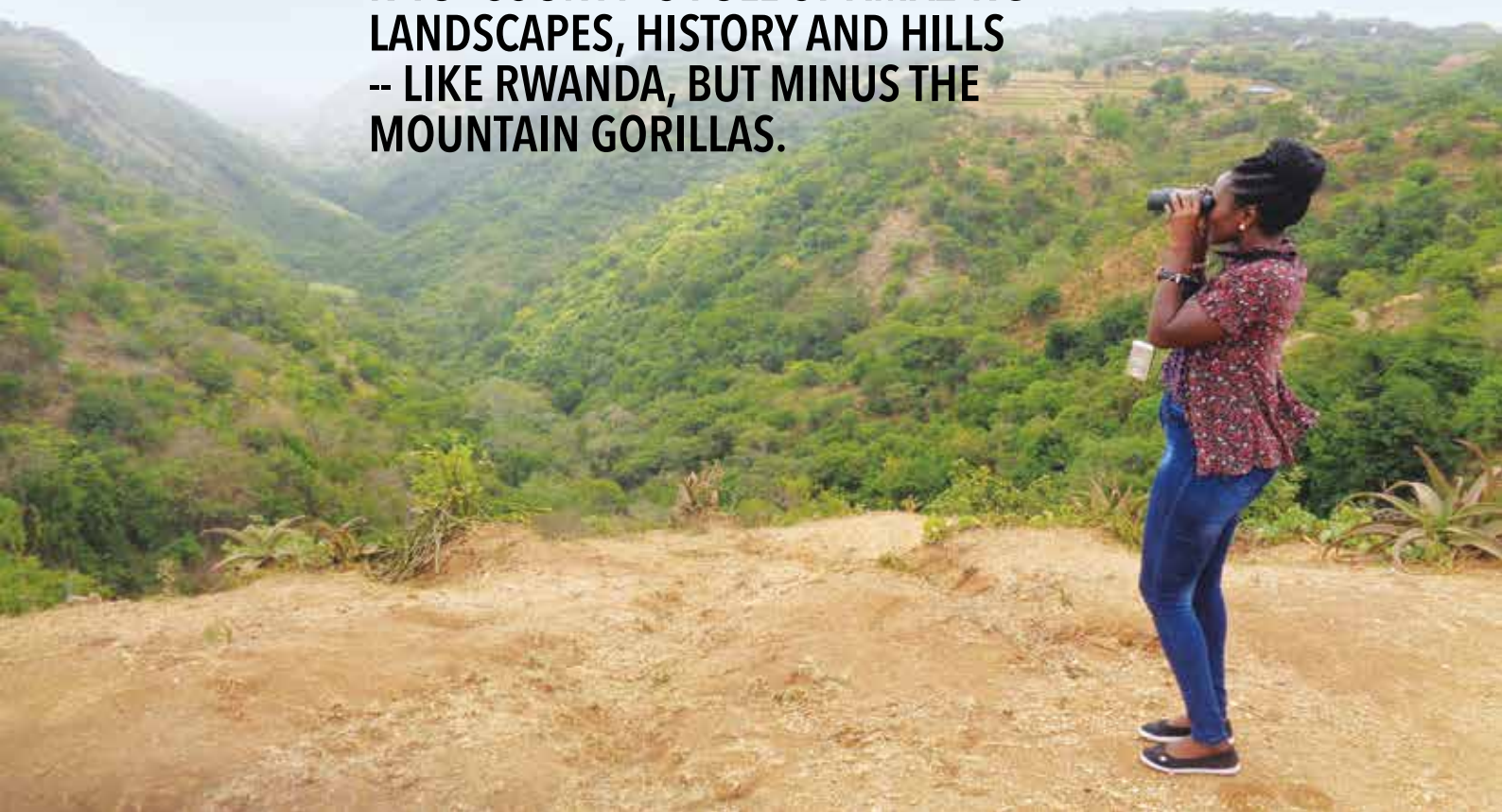
For starters, it was in the village of the powerful Kamba Chief Kivoi on 3rd December 1849, that Johann Krapf the first European into the interior saw the snowy peaks of the mountain that the Kamba called *Kiinyaa* or the Ostrich mountain because it was black and white and from where Kenya, the country name is derived.

Driving from Nairobi to Kitui town, the county capital, Mount Kenya's higher slopes waft ethereal in the afternoon sky. It was also in Kitui county that the first inland church was established at Ikutha in 1895 and still stands overlooking the Yatta plateau and plains.

KITUI COUNTY IS FULL OF AMAZING LANDSCAPES, HISTORY AND HILLS -- LIKE RWANDA, BUT MINUS THE MOUNTAIN GORILLAS.



PHOTOS BY: RUPI MANGAT



ON SAFARI

BELOW: The author at Muomo Hills where a reptile park and botanical garden is being worked on.

STEPPING OUT

“We have been in the shadows of tourism yet we are between two important wildlife areas -- Tsavo and Meru. We should be active in tourism,” states Mahmud.

“In 2014, there was nothing happening with tourism in the county,” he continues. “Our vision is for the county to be an integral part of the national tourism circuit so that it can benefit from tourism industry.”

RIVETING LANDSCAPES

It's no secret that Kitui county is water-stressed and drought-prone with women spending hours in search of water and men looking for pasture for their livestock. But that's only one facet of Kitui. The other is the vistas that the tourism officers have been mapping since 2014.

Kitui's iconic Nzambani Rock is famous, but there are many other sites being explored.

On the first day, we hike up to the tallest peak of Muumoni Hills, Kenya's newest Important Bird Area (IBA) near Mwingi bringing the count

to 67 IBAs in the country, including Mutito Hill on the southern side of Kitui.

At Muumoni hills we are in the company of Muumoni Site Support Group. “We had been concerned about how to conserve our hills,” says David Munyoki, reeling out names of the trees and their uses, the birds and leading us to local shrines, springs and caves where leopards lurk. And we see Hinde's babblers, a Kenyan endemic and raptors like the Verreaux's eagles, which called for the hills to be listed as an IBA.

KANYONYOO WILDLIFE SANCTUARY

Thirty kilometres before Kitui town from Nairobi, Charles Mwendwa from the tourism department turns into a dusty road through an acacia-filled savannah plain. We are on a game drive in Kanyonyoo Ranch, a 53,000 hectare savanna with livestock and wildlife. Handsome herds of giraffes and impalas browse, tiny dikdik flit through the undergrowth with buffaloes and Lesser kudu -- wildlife that was common in the area until human expansion. For birdlife, we see fascinating species





TOP: Giraffes in Kanyonyoo Wildlife Conservancy.

BELOW: Nzambani Rock gazetted as a National Heritage Site on 23 January 2015.

like flocks of African orange parrots, Eastern-chanting goshawks and migrants including the Silver bird better known around Lake Bogoria.

WILDLIFE RESERVES

Overshadowed by the bigger cousins like Meru and Tsavo conservation areas, wildlife reserves on the periphery were neglected.

“South Kitui national reserve became a grazing area under the county council because it did not have the capacity to run it,” says Mahmud. “We now have the mandate and we’re working with the community living around the reserve.” The

same approach is taken with Mwingi National Reserve, bordering Kora National Park where the legendary George Adamson spent 20 years with ‘his’ lions until 1989 when he was murdered.

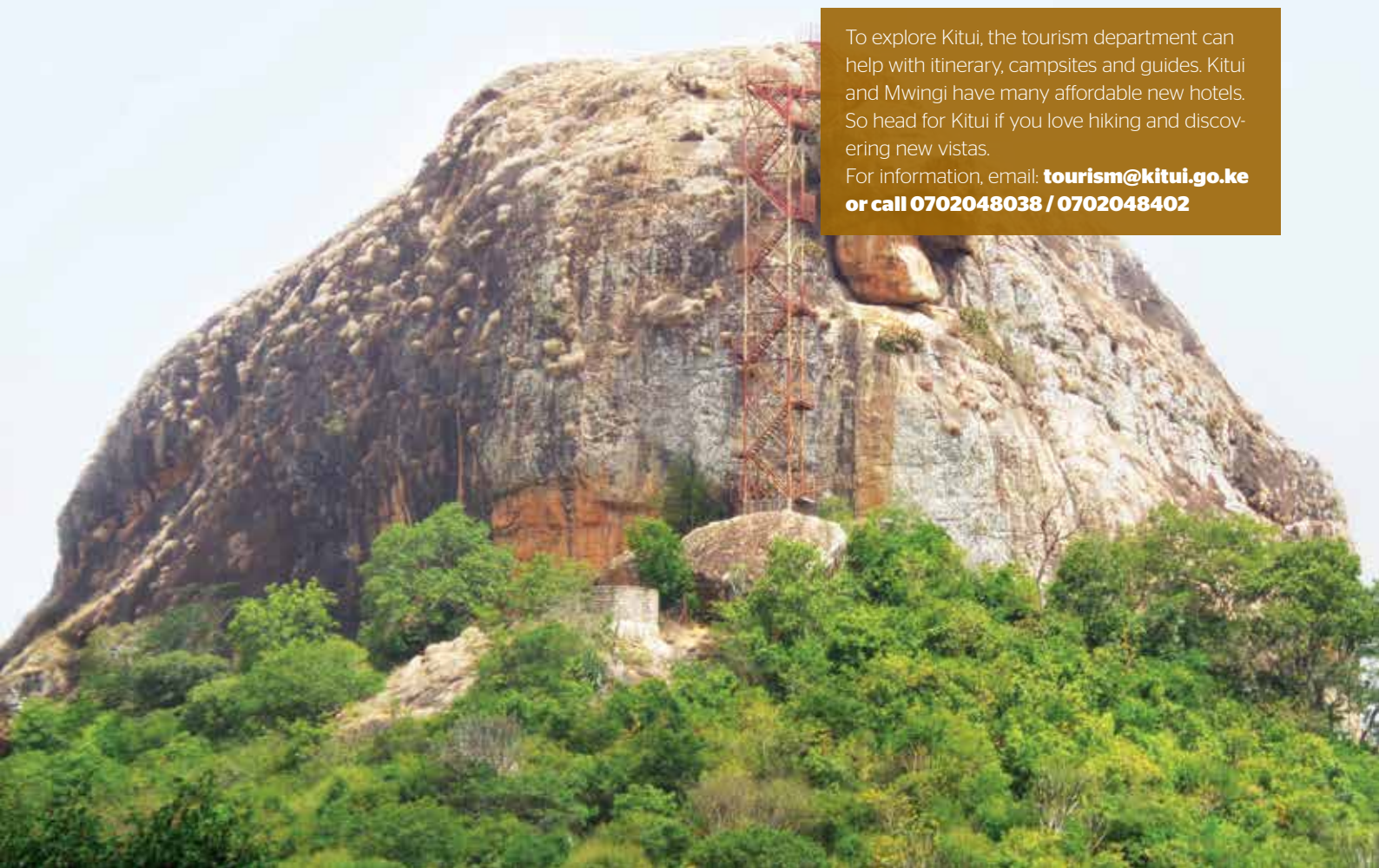
“We wrote to the George Adamson Wildlife Preservation Trust (GAWPT) because Mwingi National Reserve cannot develop without Kora,” continues Mahmud. Tony Fitzjohn founder of GAWPT, and Adamson’s assistant is keen on partnering with the Kenya Wildlife Service and county governments of Kitui and neighbouring Tana River.

Opening up Mwingi will extend the territory for the lions and work as a peace project for the two communities in conflict over pasture -- the Orma and the Kamba. “They will benefit through tourism revenue and Adamson’s legacy will continue,” says Fitzjohn. “Our motto is to ‘get people to conserve’,” he adds.

CHALLENGES

There are hurdles on the way.

“The 116-kilometre Kibwezi-Kitui road holds the key for tourism in our county and must be tarmacked. It will link us to Meru county,” says Christine Kaveke Mwendwe, the county’s tourism officer. By extension it will lead to Meru National Park where Joy Adamson worked on returning Elsa the lioness and Pippa the cheetah into the wild 50 years ago. ●



To explore Kitui, the tourism department can help with itinerary, campsites and guides. Kitui and Mwingi have many affordable new hotels. So head for Kitui if you love hiking and discovering new vistas.

For information, email: tourism@kitui.go.ke or call 0702048038 / 0702048402

Basecamp Explorer

Ecotourism with a difference



PHOTO BY: BASECAMP EXPLORER

The Masai Mara National Reserve in Kenya is renowned for its varied wildlife. Conservationists often issue warnings on the creeping damage to the ecosystem and animal habitats through unplanned and unsustainable tourism.

Seeing the need to practice a more wholesome form of game viewing tourism, Basecamp Explorer introduced a concept that seeks to preserve the ecosystem while empowering local communities to improve their livelihoods through capacity building, conservation awareness and women empowerment.

One of the highlights of Basecamp Explorer's engagement with the local community in the Masai Mara is the Basecamp Masai Brand (BMB), a women's group that makes bead and leather handicraft to sell to tourists. The social enterprise, which has 158 members, has become so successful that even men from the patriarchal Maasai community turn up with requests that their wives be enrolled as members, according to Jemimah Sairowua, the Project Manager. The attraction is the financial independence that BMB has engendered among women in the Talek area, where Basecamp Masai Mara is located.

"I now earn my own money. I have stopped depending entirely on my husband," says Kimanyisho Sairowua, a young mother of three and a member of the Basecamp Maasai Brand. She no longer lives in a traditional mud hut, she says. The income from BMB has made it possible for her to build a house with a corrugated tin roof. One of her daughters is in boarding school because she can now afford the school fees.

Earnings from handicraft sales to tourists and online customers across the world are



JOHN NYAGA is the Editor of Swara Magazine.

ONE OF THE HIGHLIGHTS OF BASECAMP EXPLORER'S ENGAGEMENT WITH THE LOCAL COMMUNITY IN THE MASAI MARA IS THE BASECAMP MASAI BRAND (BMB), A WOMEN'S GROUP THAT MAKES BEAD AND LEATHER HANDICRAFT TO SELL TO TOURISTS.



PHOTO BY: KNUIT BRY/TINAGENT



PHOTO BY: BASECAMP EXPLORER

LEFT PAGE:
Basecamp Explorer Afforestation Project. Since its inception over 15 years ago, more than 80,000 indigenous trees have been planted.

TOP RIGHT: View from Basecamp Masai Mara.

BELOW RIGHT: Basecamp Masai Mara Viewing dining deck.

transforming lives. "More women would join if the market was larger," says Sairowua, the project manager. The enterprise has brought in millions of shillings with approximately 25 percent growth year on year.

At the BMB workshop the women are busy at work as they chat. The more items one produces the more individual earnings at the end of the month. Each month 75 per cent of the profits will go directly to the women. The remaining 25 per cent goes to the cost of materials and management of BMB, a fair trade certified enterprise.

Basecamp Explorer has also made efforts to restore the degraded ecosystem with a tree afforestation programme started in 2000 and which has become an expanding woodland with 80,000 indigenous trees planted. Each guest at Basecamp Masai Mara is encouraged to plant a tree during their stay. A seedling can be obtained from the tree nursery managed by Mwana, one of the local Maasai youth. Saplings are also given to members of the local community



Big cats of Mara Naboisho. The density of lions within Mara Naboisho is one of the highest in the world.

who wish to plant trees elsewhere. The idea is to sensitize the community on the importance of afforestation and habitat conservation.

There are 12 tents at Basecamp Masai Mara. Each with a private veranda overlooking the Masai Mara Reserve, and an open air en suite bathroom with a hot solar-heated shower. An especially plush tent hosted then US Senator Barack Obama and his family in 2006. Each member of the Obama family also planted a tree in the afforestation area.

Back at Basecamp, our safari guide Joseph Ouko is ready. We venture out through the suspended foot bridge over the Talek river into the van and head out into the vast Masai Mara National Reserve where herds of antelopes, big and small, mingle with buffaloes, giraffes and zebras. At a distance Joseph spots two elephants ambling along the riverbank. We drive closer for a better view of the pachyderms.

Our curiosity satiated, we drive away in the opposite direction as packs of hyenas furtively criss-cross our path. In a thicket along the crocodile-infested river, four lionesses lie in deep slumber, oblivious of our purposeful photographing. Occasionally, one lioness or another rolls over, eyes opening up briefly, and back to sleep.

We head back to the camp for breakfast. Guests can enjoy game viewing from the convenience

of their dining table, set within the grounds of the camp. Visitors can also view wildlife from the tents, the fig-tree platform or while enjoying drinks at the open-air bar.

The next day, in the company of our Maasai safari guide, we set out for Eagle View, another camp managed by Basecamp Explorer in the Naboisho Conservancy, north of the Masai Mara. Enroute, a large herd of wildbeest graze in the lush savannah where recent rainfall has rejuvenated the grass. The gnu seem oblivious to the fact that a cheetah has brought down one of their number and is enjoying the meat not far away as a wake of vultures stand by to feast on the left overs once the big cat has eaten to its fill.

We stop to view and photograph. The cheetah is still panting from the sprint that preceeded the kill and eats with some difficulty, the wildbeest flesh apparently too tough. The vultures waiting at a distance betray no impatience. The kill is a big one. A meal is guaranteed.

Time to proceed. We are scheduled to stop over at Wilderness Camp enroute to Eagle View.

Wilderness Camp is designed to be a reminder of the African safaris of yore – before modern contraptions of luxury spoiled authentic excursions into nature. Here at Wilderness you are away from it all, except the wildlife, the stars and members of the local Maasai community. Highlights include a guided walking safari.

We arrive at Eagle View where manager Shadrack Munoru and his staff are waiting with refreshments. We check in, have a late lunch and hop into the safari jeep for game viewing in Naboisho Community Conservancy, another of Basecamp Explorer's efforts to ensure that the Maasai community keep their land while earning decent returns from sustainable tourism. The community has leased the land to investors in safari tourism.

The 20,000-hectare Naboisho, which means 'coming together' in the local Maa language, is managed in a strict sustainability model. The more than 5,000 landowners are paid a land lease fee, a much needed income for nomadic herders of limited means.

As the sun sets on our game drive in Naboisho, we stumble upon a lion and lioness asleep. They will soon wake up and embark on a nocturnal hunt, says Amos. It shouldn't be too hard to find a meal. Naboisho teems with herbivores.

We are soon back in Eagle View, our abode for the night, perched on top of the hill overlooking a natural well where wild animals of all manner come to drink throughout the day. We sit by the fireplace in the extended lobby, an ideal spot for an evening drink listening to the sounds of different animals as night falls over the African wilderness.

Dinner is served and shortly afterwards we retire to our cosy tent. The morning game drive

BELOW: Eagle View is located atop a natural hilltop, allowing for exceptional views of Naboisho Conservancy. The camp overlooks a waterhole, frequently visited by a variety of wildlife.

would be the time we are rewarded with sight of a lion couple walking majestically in the bushes to a destination only they know.

Before embarking on our long drive back to Nairobi, we spend some time with students at Koiyaki Guiding School (KGS) and their principal, Julius Kisemei. A capacity building institution set up to train local youth on sustainable guiding skills, preparing them for employment within the safari industry in Kenya and beyond. Basecamp Explorer sponsors a number of students, mainly girls every year. Twenty-four-year-old Lorna Naisiai, a safari guide employed by Basecamp is one of the 247 KGS alumni, including 46 women, to graduate from the school since it was founded.

"The school has enabled women from the patriarchal Maasai community to participate in tourism," says Lorna, who was sponsored for the tour guiding course by the Robert Smith family of the United States. "I am now a role model in my village. Other girls admire me." ●

How to get there

Basecamp Explorer camps in the Masai Mara are accessible by air via Olkiombo airstrip or the Naibosho Olseki airstrip, which is approximately 20-30 minute drive from the camp. The flight to the airstrips from Nairobi's Wilson Airport takes about 45 minutes. By road from Nairobi, the drive takes 5-6 hours.

PHOTOS BY: BASECAMP EXPLORER



Wildlife Photo Story



KIRAN GHADGE is an award winning wildlife filmmaker, cameraman, editor, story teller and a photographer from Maharashtra India.

Taken at Masai Mara this male lion stood looking at a possible prey, tall and majestic, as the wind softly pampered and petted the beast.



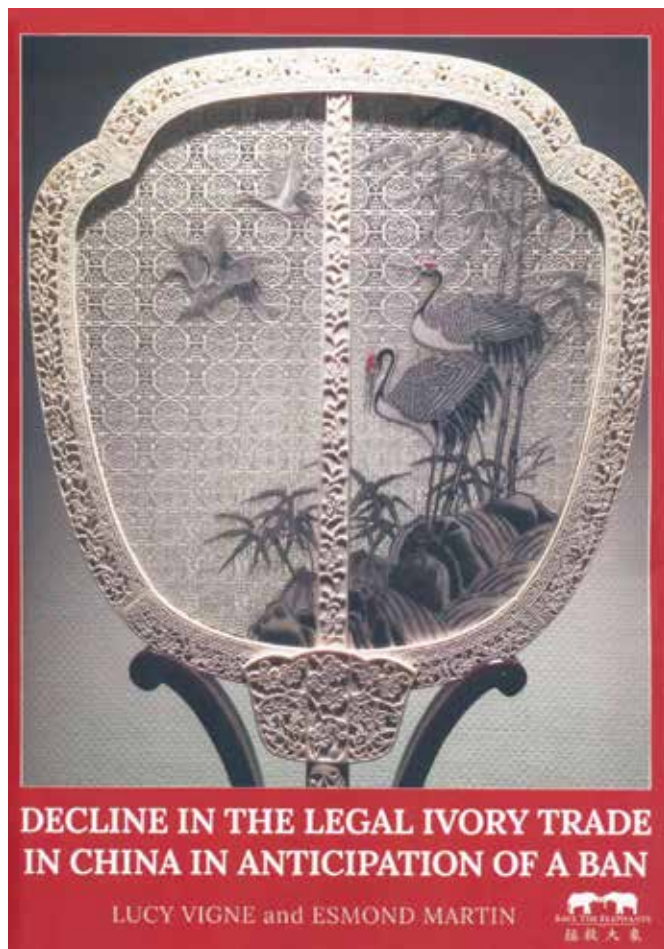
Early morning as the sun lights up the vast grasslands and the curving roads, and sky so clear as if a blue cloth is spread across for these zebras, the owners of the land, rightfully demanding the right of way.



PHOTOS BY: KIRAN GHADGE

A family of lions relax in the evening, the light was beautiful and fell softly on these beauties.





This is a review of a report recently produced by Lucy Vigne and Esmond Martin, with the funding support of Save the Elephants, on the status of the ivory trade in China. There has been considerable concern in regard to China being the largest single destination for illegal ivory from Africa.

This concern has been escalated by the view of many that China's legal trade was not well enough regulated to clearly distinguish between what was being retailed legally and what was being sold illegally. However China has also been reflecting its concerns such that in January 2017, they have introduced a ban on domestic trade which will become fully effective during this year. This report then comes at a very relevant moment as it sets a yardstick against which the effect of the ban can be monitored.

Vigne and Martin undertook a month's survey, during October and November 2015, of six cities known for their ivory carving and for retail sales, but which had not been surveyed before. These six cities were Shenyang, Tianjin, Nanjing, Changzhou, Hangzhou and Suzhou. In addition they revisited Beijing and Shanghai, which they had surveyed some 18 months earlier, which facilitated picking up on any changes in prices.

However it is also worth emphasising that they did not restrict their survey to elephant ivory but also mammoth ivory, which is

legally carved and traded in China from tusks mainly recovered from the Tundra in North-east Russia. In conducting the survey, they interviewed owners of ivory workshops, ivory artisans, vendors, and customers. They inventoried the ivory pieces displayed for sale, including their prices and they collected as much information as possible in regard to any economic and political influences that could affect trade patterns.

The results of their surveys are well documented in the report, which devotes a chapter to each of the eight cities. The report then continues with a chapter reflecting what emerged from the discussions as the views of the dealers and legal ivory carvers. These range in subject matter from use of substitutes, carving itself, mammoth ivory, licensing, legal ivory issues, smuggling, illegal ivory competition, and retail ivory sales.

One thing that emerges from this study is that the period of early 2014 to late 2015 has seen a fall in the wholesale prices of small to average pieces of illegal raw ivory by some 50 per cent. Mammoth ivory has dropped by some 15 per cent, and illegal ivory was retailing at a similar price to mammoth ivory. But more significantly, in Beijing and Shanghai, the evidence shows a decline in the sales of ivory items, coupled with fewer customers, such that the outlets were seeking to diversify into different materials. Some outlets were even closed for parts of the week, attributed to the slowdown in the China economy. But other factors contributing to the reduction in trade include a crackdown in corruption and the anti-ivory campaign.

Vigne and Martin's main conclusion then is and I quote: "The legal ivory trade in China is dying." Their view is that the ban being introduced will bring about a shutdown of the officially registered ivory factories and a removal of ivory items from the licensed retail outlets. They go on to question what implications does this have for the illegal domestic ivory trade. Time will tell, but I would like to share a thought or two of my own.

With the shutting down of the legal trade in China, then in theory every transaction undertaken from now on falls under the illegal category. Provided there is a commitment to undertake enforcement, and apply serious penalties, then, in theory, the illegal trade should see a decline and hopefully a complete decline within China itself. But in Vigne and Martin's equally good report on the ivory trade in Vietnam, they state as follows:

- Contrary to elsewhere in Asia, Vietnamese carvers have multiplied in number and increased their production of illegal ivory items.
- Nearly all the customers were from mainland China and the chances of being arrested for carrying illegal ivory across the border are extremely small due to ineffective law enforcement. But there is also a growing 'online' trade.

Reviewed by Nigel Hunter

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