NORTH LUANGWA CONSERVATION PROGRAMME

30 YEARS OF PROTECTING AN ICONIC WILDERNESS



FRANKFURT ZOOLOGICAL SOCIETY

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Claire Lewis and Ed Sayer are project leaders in North Luangwa since 2007.

Dear Reader,

North Luangwa is our home, Frankfurt Zoological Society's legacy and Zambia's jewel. It fills a large part of our hearts, FZS' portfolio, and Zambia's Luangwa Valley. It is beautiful, special, unique and home to the country's only black rhino population.

We have been privileged and honoured to be part of this exciting and demanding project, following on from the vision and standards realised by our predecessors and FZS over the last 30 years. As we look back on events over the last three decades throughout this brochure it is evident that so many aspects of the project could never have got off the ground without hard work, commitment, dedication and courage. It has been a labour of love and passion, and ultimately the strength of FZS' partnership with the Zambia Government and its wild-life authorities, the support of loyal and innovative donors, and the advice and technical input of far too many to mention individually here.

The project has not been without its challenges and, while continent-wide poaching persists as a threat to rhino and elephant populations, there is no time to let our foot off the pedal, sit back and relax. We continue to step up operations, with new technology, new strategies and we recently welcomed two new members to the task with the creation of the North Luangwa Canine Unit.

We continue to strive towards a secure and sustainable future for the wildlife and communities that inhabit the ecosystem. We have a vision that brings custodianship to the people living with the wildlife and we look forward to reporting back on that in the years to come. Working together we can bring about this change.

We hope you can relive some of the highlights of the project through the coming pages and that you will share in our 30th anniversary celebrations and applaud everyone involved from start to... well, we're not ended yet!

Clareheun ET

Claire Lewis

Ed Sayer

P.S. Although we would dearly wish we could be specific about figures relating to the North Luangwa black rhinos, it is sadly no longer deemed safe to do so in public literature; for that reason, absolute rhino numbers are not referred to in this brochure. We hope one day this will no longer be the case.

30 YEARS OF CONSERVATION IN ARTA LUARGA

Frankfurt Zoological Society reflects on 30 years of conservation work in North Luangwa in close collaboration with the Zambian Department of National Parks and Wildlife, and what the future may bring for this pristine wilderness area in the heart of Africa.



Work begins on the North Luangwa airstrip.



The North Luangwa Office in 1987

1987

and one aircraft; Zambian

of Research Centre.

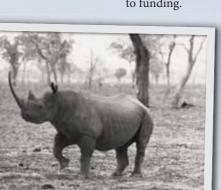
authorities approve building





First engagement of FZS with Zambia Wildlife Society for public environmental education

Continuing education of teachers about wildlife as part of the Luangwa Valley **Conservation Project**



Black rhino in Luangwa Valley (about 1970)

American biologists Mark and Delia Owens start the 'North Luangwa Conservation Programme' to counter poaching; FZS contributes to funding. FZS provides four vehicles

Major equipment purchase and delivery; ivory trade is internationally banned.

> Programme is taken over by Zambian authorities.

> > -NLP

FZS invited to join Programme partnership, Elsabe Aucamp and Hugo van der Westhuizen become project leaders.

1997

Government of Zambia and Frankfurt Zoological Society sign agreement to jointly support North Luangwa National Park until 2008.

SH-ZGF

NORTH LUANGWA CONSERVATION PROGRAMME



The programme provides practical, hands-on field training for Scouts.



Control and command centre set up in the National Park

Rhino reintroduction project planning and vision created

Zambian Department of National Parks and Wildlife Service becomes Zambia Wildlife Authority; law enforcement database installed

5

May, 2003: The first five rhinos arrive.





(Frankfurt Zoo), Christof Schenck (FZS), Hector Magome (SANParks), Hapenga Kabeta (ZAWA)



Precious cargo: Unloading rhinos



Transmitters are placed in the horn to be able to locate the rhinos daily.



Once a year, the rhinos are immobilised for a health check and transmitter replacement.



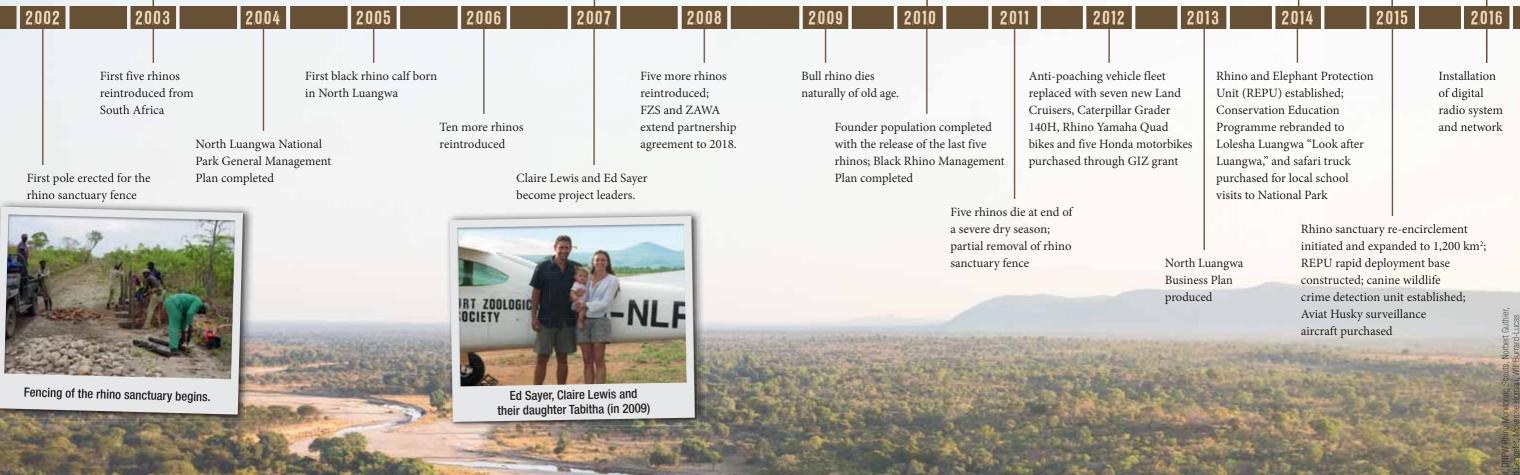
Natwange and her third calf, Mwamba, 2012



Rhino Scouts







The workshop keeps the Programme going.

FOUNDATIONS FOR NO COC FOR

The North Luangwa Conservation Programme is the joint effort of Frankfurt Zoological Society (FZS) and the Department of National Parks and Wildlife (DNPW) to protect a unique wilderness area. The programme, through this partnership, delivers hands-on and effective conservation. It has brought the North Luangwa wilderness back from the brink of disaster and successfully led to the black rhino reintroduction project, which was often seen as a far-fetched endeavour.

By Claire Lewis and Ed Sayer

FZS has a worldwide reputation as a field based conservation part ner delivering robust protected area management support to national wildlife agencies. NLCP has worked hard to achieve its success and Well trained medic training provides scouts with confidence to deal this is based on more than just simple numbers.

Appropriate law enforcement depends on technical and logistical support – from the socks and boots of the officers on patrol right up to advanced tactical unit training. Our programme ensures that all vehicles are purchased, managed and serviced for park management and all roads, airstrips, river crossings and buildings are built and maintained. We installed and continue to service a radio network across 22,000 square kilometres. And to make all that happen, we continuously seek and apply for funds to deliver the support. Our intense law enforcement focus has provided an enabling environment for the rhino project to function and operate.

But what does that mean? What is an 'enabling environment'? One can quantify some aspects: the elephant population has shown a gradual increase over the years and the North Luangwa ecosystem now holds the largest in the country. Other aspects are harder to describe, but here's our interpretation:



with injuries and wounds.

TRUST

For any intervention or activity to be implemented, adhered to and successful, trust is paramount. Trust must be present from the lowest ranking officers to the highest, and vice versa. Trust between the partners, DNPW and FZS, is critical and takes many forms: following protocol and commands, honest and clear reporting, and ultimately delivery of given mandates. Trust can be fragile and broken when vehicles are not functional or anti-poaching patrol ration packs are not delivered on time. Trust can be lost when training is not carried out and when standards slip. If any part of the chain is missing the cohesion of the partnership and its ability to implement will unravel. The success and ambition of the North Luangwa Conservation Programme lies in the strength of the partnership with DNPW.



Testing physical limits during training

CONFIDENCE AND MOTIVATION

We often hear that motivation comes from conditions of service but that is just part of it. Motivation comes from an inner confidence in one's ability to perform and deliver, confidence in equipment and confidence in chain of command to provide the necessary leadership for the unit. It comes from an individual's belief and personal desires. To believe in and want to see the job as a responsibility not a pay packet, to protect the integrity of the North Luangwa ecosystem for future generations. This is what we have tried to instil within both the DNPW and FZS staff operating within the programme area. FZS' commitment to North Luangwa underpins all this – we're in it for the long haul, confident that we won't bail when things get tough.



Teamwork on an immobilised rhino

DISCIPLINE

of discipline. Regular cycles of training for new recruits, serving officers and advanced tactical units are critical to improve operations. We try to make sure that the default standard is high and the skills and theory taught during training translate to everyday duties. FZS constantly provides support to create relationships that are based on joint visions and discipline and accountability at all levels, where the ups and downs of implementation are challenged by the partnership.



DNPW Head of Veterinary Services, Dr David Squarre on duty during the annual rhino immobilisations

LEADERSHIP AND COORDINATION

Any success in North Luangwa is the direct result of good leadership and the programme has benefited from strong leaders in many of the former and current DNPW wardens and rangers. As soon as a less effective leader is given office, on either side of the partnership, effective implementation is severely hampered. The DNPW radio control room in central North Luangwa National Park is the nerve centre of operations and is critical to the management. All anti-poaching patrol information is received, analysed and interpreted here, helping to dictate management decisions and actions. FZS has invested heavily in supporting the functionality of the control room with basic mapping and plotting of all patrol movements, implementing a patrol deployment schedule, managing patrol movement, monitoring poaching incursions and reactive operations. Recently this has been significantly enhanced with the installation of a digital radio system that enables live patrol and vehicle mapping, with analysis of patrol and poaching data in a database that allows commanders to monitor performance at individual, team, unit, camp and sector levels.



Meeting of Intelligence and Investigation Units from Luangwa. Zambia and Lilongwe, Malawi

INTELLIGENCE

Conversely, a major challenge to confidence and motivation is a lack Technical support itself cannot curb the increasing elephant poaching across the continent. Rhino and elephant populations are under threat from organised cartels that operate across the region and infiltrate the system. Over the last four years, FZS has been investing in the DNPW intelligence and investigations unit. This has been delivered through training, equipment, resources to operate, and funding to facilitate follow up investigations. Until the demand for ivory and rhino horn is reduced, this level of support will need to be maintained.

"Poaching has reached new levels of organisation"

Solomon Chidunuka is the DNPW Senior Wildlife Warden for Muchinga Province in Zambia, coordinating the conservation activities in the region. Here, he talks about ways to counter recent trends in poaching crime.

For many protected areas in Africa poaching is a major problem. Can you describe the situation in Zambia?

In the recent past we have seen an increase in poaching of elephants and other species but the situation is so far manageable. As long as we have support in terms of finances from our cooperating partners for law enforcement, intelligence, and investigations, the levels of poaching will not go beyond our control.



Has poaching reached a new level of technological sophistication?

Poaching has reached new levels of organisation. This time around poachers know of pockets of phone network within the protected areas. This enables them to communicate early warning alerts. Some poachers are using military weapons such as AK47 and G3 rifles.

What can you do to react to these changes?

We need to be proactive to counter these changes in the way the poachers organise themselves. The answer to this challenge is to ensure that we organise and put in place a wider and efficient informant network system. This helps us know who poachers are, their routes and time of entry into protected areas, and we can challenge them before they cause any damage. The informant network also helps us to know the routes and methods they use to move their contraband.

Cross border conservation should also be considered with neighbouring countries as environmental influences in one country

tor poachers.

reversed?



can impact another. It is, therefore, prudent to share intelligence and, where possible, work together to ensure the illegal trade of wildlife products is controlled. This means the budget for intelligence and investigations should be high so that there is effective mobility to moni-

egal ivory trade has reached a new peak. Are growth trends of elephant populations now

The positive growth trends are not yet reversed. The recent aerial surveys indicate that the elephant population in the North

Luangwa ecosystem is increasing. A good number of breeding herds were spotted. This information has not yet been officially published, but as a manager for the area I had an opportunity to discuss with the people who were involved in this census. However, we cannot relax law enforcement, or intelligence and investigations to ensure safety of our animals.

Do you get support from the communities?

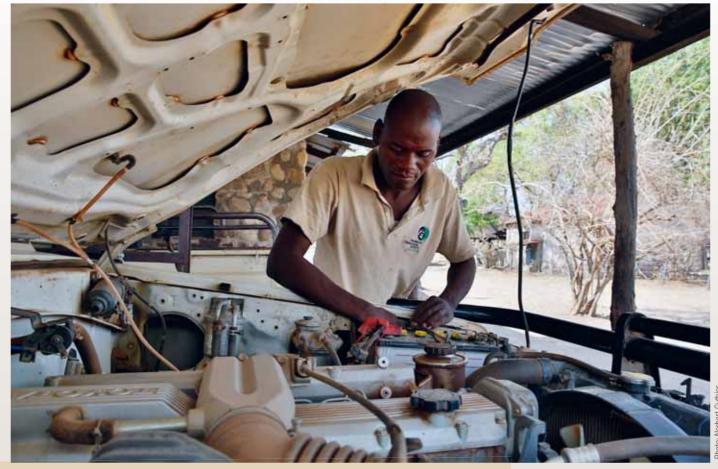
Most illegal activities are only reported when there are monetary incentives. Few members of the communities will report illegal activities freely. In my view, this lack of support is due to the fact that the people do not see tangible benefits from conservation. They are not actively involved in the management and governance. For this to change there should be fair and equitable sharing of benefits from conservation.

If you were given two options to do anything to try and curtail elephant and rhino poaching in Zambia, what two things would you do?

One would be to improve the collaboration of key departments such as Zambia police, customs and judiciary through training to guard against and avoid corruption. The second option would be continuous capacity building for Wildlife Police and Investigations Officers so that they are always fit and proactive in the way they handle situations in the field. This should include arming officers with effective equipment such as firearms, GPS devices, radios, motor vehicles and providing enough manpower to cover protected areas.

Trade with rhino horn and ivory is international. Do you think the international community is doing enough to counter poaching?

The international community is doing a lot to stop the trade of illegal wildlife products and to preserve biodiversity in Africa. Another focus should lie in addressing the consumers of these products, especially in Asian countries. Countries of origin in Africa and consumer countries should share more information on how to combat the illegal wildlife product trade.



Because transport is our main job."

As the workshop manager responsible for maintenance of all vehicles, Gershom Mwamba, who grew up in North Luangwa, keeps the programme's wheels turning.

How did you come to join the programme?

In 2007 I was at college studying automotive mechanics. My father who was working for the programme and paying my school fees became sick and I applied for sponsorship to North Luangwa Conservation Programme and the project leaders accepted my application. They paid for my final year and examination fees. In 2009, I joined the NLCP team full-time as a workshop assistant. I was promoted to workshop deputy foreman and then to workshop manager in 2015. This was due to the interest I was showing and my work.

What type of vehicles do you do maintain? The vehicles that I do maintain are Toyota Land Cruiser, tractors, Mercedes Benz trucks and quad bikes. I mostly deal with Toyota Land Cruisers because they are the most common in our fleet used by the scouts for their operations. Damages are often due to road accidents but also wear and tear. I ensure that all vehicles are in good condition at all times, because transport is our main job in our programme.

What about supplies? Do you get all the parts that you need or do you find alternative solutions?

We can't always get the spare parts we need from the suppliers, so we take the good spares from older damaged cars to keep operations going. Some parts we have to order from outside Zambia and find alternative solutions for while we wait for them to arrive.

Are there technical developments you would wish for in the NLCP workshop?

I would wish to have workshop computers to help us know what spares we have on stock and what we have used each year.

What's your main motivation for the job?

I'm motivated by the way we interact with our leaders, the way we work as a team, and the way I have been promoted. I appreciate the way we are being looked after by the programme, like the accommodation and entertainment.

As a local community member, how is the NLCP perceived in the local community?

As a member of the neighbouring Mukungule community I have seen NLCP educating people about the importance of animals and the ecosystem and also creating employment opportunities. The last ten years have seen considerable development in the Mukungule community where most of the programme staff are recruited from.

"It takes passion.

Elias Chiweshe was trained in North Luangwa National Park and became a scout in 2003. Today, he is Park Ranger and leads the Rhino and Elephant Protection Unit (REPU), involving the planning of patrols, coordination of rhino monitoring and the unit's operations.

To support your attendance and completion of your diploma at the Kenya Wildlife Service Training Institute, you were awarded the Grzimek sponsorship. Do you feel that has helped you in any way?

Yes, I acquired knowledge I did not have. I was promoted from senior wildlife police officer to ranger based on this qualification. It has improved my personal status in terms of monthly income, work responsibilities and respect from my family. It also helped me in pursuing a bachelor's degree in wildlife conservation and natural resource management with Livingstone International University. I am enrolled in the second year.

As the Ranger in charge of the Rhino and Elephant Protection Unit, do you feel your unit is equipped and trained enough to deal

with the elephant and rhino poaching threat? Yes, the team received the best training and skills to deal with the elephant and rhino poaching threats. However, the equipment needs to be replaced over time and, more importantly, we need new and serviceable firearms and ammunition. We need to maintain a well motivated team of officers and gather as much information to react to the threats and make follow-ups.

What more do you think needs to be done to fight the poaching threat for elephant and rhino?

Officers should have a passion for the protection of our valuable resources in the country and in North Luangwa National Park, in



Elias Chiweshe assists with a a transmitter replacement during an immobilisation

evaluated based on results and that it is not just a job. It takes passion to protect our elephants and rhinos. Therefore, the ministry should provide good working conditions for officers and indemnify officers in the field as they often risk their lives while protecting elephants, rhinos and other wildlife.

You have been involved with the North Luangwa rhino reintroduction and protection

PER MAN: 42 litres backpack bladder – 5 day på 75 litres backpac Webbing Uniform Belts Bush hat Socks Rain ponch Mess tins Head torch Tourniqu Bleed ba One ma Bed rol Sleepi Grou

particular. Officers should know they are from the beginning. Can you explain the factors that have enabled this project to work?

I think the most important factor is the longterm partnership between Frankfurt Zoological Society and the Department of National Parks and Wildlife. This has enabled continuous support of the project. Last, but not least, it takes committed officers for law enforcement operations including monitoring of the rhinos.

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In the scent of wildlife crime

The words 'sniffer dog' conjure up images of beagles and spaniels at baggage carousels at airports sniffing out illicit drugs. But a dog's nose can be trained for just about anything. Dogs working hand in paw with conservation projects are a relatively recent addition to the law enforcement strategy toolbox yet they are energetic, effective and efficient and are unmatched by any technology currently available. Dogs in Zambia are helping the fight against the trafficking of illegal wildlife products.

The last 30 years of FZS support in North Luangwa has led to the reduction in poaching of the 1980s and 1990s and the successful reintroduction to Zambia of black rhinos. But in this decade, the challenge of all that hard work is being threatened by international criminals fuelled by greed, the demand for illegal wildlife products, and links to other economically destabilising activities. The North Luangwa Conservation Programme has a proven record of good management and successful operations but new strategies and technologies are needed to upscale anti-poaching efforts, to stem the rising threat. The development of the North Luangwa Canine Unit (NLCU) is causing great excitement to counter this.

The use of dogs in anti-poaching and law-enforcement has an increasingly proven track record of success in a number of conservation areas across Africa. Wildlife crime detection dogs operating at gates, borders and strategic road blocks can address the movement and trafficking of illegal wildlife products such as ivory, rhino horn and bush meat as well as firearms, ammunition and illegally harvested hard wood timbers.

In November 2015, to create the NLCU, FZS entered into an agreement with Working Dogs for Conservation (WD4C) who source and train rescue dogs for wildlife crime detection in the US. They then Dogs are trained to find wildlife products or ammunition.

travel with the dogs to Zambia to select, train and mentor human handlers in welfare, behaviour, training, and operations. The dogs selected by WD4C are those that have been abandoned or given over to a rescue shelter because they are unsuitable for a home environment, typically because they need high stimulus, without which they can be destructive and too boisterous or even, aggressive.

The NLCU has two dogs: Vicka, a two-year old female black Labrador/Malinois cross breed who was rescued from being tied up 24/7 by a family who was unable to handle her energy levels; and Sara, an almost two-year old Pit Bull/Labrador, who was very close to being euthanised after being rejected by four different homes and shelters. Giving these dogs a new purpose and a second chance at life adds an emotional dimension to their story. Now they are able to detect ivory, rhino horn, ammunition, firearms, bush meat and an endangered hardwood, and have a very important role to play in North Luangwa. They have very quickly become part of the team helping to prevent wildlife crime and we can't wait to bring you more news of their successes in the future.



Success of the canine unit relies on good relationships between dog handlers and their dogs.

A DOG'S DAY

Samuel Ng'uni, Head of the Canine Unit based in North Luangwa National Park, describes a typical day at work training and handling scent detection dogs. "I'm proud of what I do as a dog handler. Some people laugh at me, but I'm never challenged. I'm very happy for the introduction of a Canine Unit within REPU."

5:00 AM	Check the kennel for hazards. Wake up dogs and take them to play area. Physical exams from nose to tail. Apply fly spray for tsetse fly control.
6:30 AM	Give dogs breakfast according to individual feeding requirements. Take each dog's temperature.
8:00 – 11:00 AM	Morning training. After training take dogs to play area and cool them with sprinkler or pool.
11:00 AM	Clean the kennel with disinfectant, spray to deter tsetse flies, clean water and food bowls, and change water in the plunge pool. Clean and dry all training gear and organize the gear room.
2:00 PM	Daily maintenance training: obedience, restraint, and training with muzzle.
3:00 – 5:00 PM	Afternoon training: obstacle course, scent training, recall training, or other exercises.
5:00 – 6:30 PM	Dogs play together in play area. Observe behavior.
6:30 PM	Give supper to dogs. Physical exams.
8:30 PM	Bedtime.



Playtime is an important part of everyday routine.

"It has not been plain sailing"

Raoul du Toit coordinates the Africa **Programme of the International Rhino** Foundation and he is the Director of the Lowveld Rhino Trust, Zimbabwe. He has been part of the North Luangwa rhino reintroduction programme since its inception and continues to provide ongoing strategic guidance as well as support for the annual rhino immobilisation and transmitter replacement exercise.

The black rhino restocking project of the North Luangwa Conservation Programme is one of only two significant regional rhino restocking projects undertaken in Africa

over the past two decades. The other is the recent restocking project in Moremi Game Reserve in Botswana.

What makes a regional restocking project "significant" in my opinion is that it involves over 20 founder animals being translocated to a country in which the species

went extinct, and being released in an area which has the potential they may need genetic reinforcement from black rhinos that are for population expansion to over 100 rhinos.

that ensure that everything comes together.

Such operations require years of careful planning to bring the rhinos in and ongoing efforts to conserve the rhinos once they are released add to North Luangwa. all depending on sufficient long-term funding. These efforts depend heavily upon dedicated staff members who serve as champions for Apart from this challenge, the other major challenge is obviously the process. While diplomatic and administrative efforts are required poaching. It is a remarkable achievement that no confirmed poaching at a government level, it is really the personal efforts of those losses are apparent since the restocking commenced. However, champions that ensure that everything comes together, often in the in view of the intensity of regional poaching pressure, it would be face of immense logistical and bureaucratic frustrations. Frankfurt unrealistic to expect that no rhinos will be poached. The primary Zoological Society (FZS) has provided the champions for this proobjective, therefore, is to safely expand the sanctuary while adding cess, and made the restocking project the success that it is today. genetic reinforcement to the current population, in order to ensure a population growth rate that exceeds the rate of future poaching losses. With political support and the ongoing professional teamwork that has been such a notable feature of this project, I'm sure this objective can be achieved.



It has not been plain sailing at all. Although the overall population growth rate has been positive, the rhinos have shown what I regard as significant adaptation problems. There have been mortalities and losses of body condition that still arise. A particularly alarming spell of mortalities occurred in late 2011.

Professional views on the reasons for these problems agree on some aspects, but differ on others. All agree that there have been seasonal nutritional problems that were aggravated by slow decision-making (outside the power of FZS) on the removal of temporary sanctuary fences, resulting in overstocking in some sections. However, the habitats are the same as those in which black rhinos thrived in the past. They are also very similar to those of the Zambezi region of Zimbabwe which also held high densities of black rhinos. It is not logical to simply suggest that the area's rhino carrying capacity was greatly overestimated by various ecologists who were involved in the planning of the project.

It is the personal efforts of *dedicated staff members*

With the passage of time, since some management problems arose during some of the translocation phases, including the fencing issue, the hope is that the rhinos will settle into a steady breeding pattern. However, in view of the fact that the founder population was derived entirely from South Africa, the possibility exists that

specifically adapted to the Luangwa/Zambezi ecosystem. Therefore, I strongly urge that Zambia makes a major effort to negotiate with Zimbabwe over the allocation of some Zambezi-origin animals to

"The rhinos have brought a focus on North Luangwa"

FRANKFURT ZOOLOGICAL SOCIETY 18



Ed Sayer working on an immobilised rhino to replace a transmitter

Is there conflict?

Project leader Ed Sayer speaks about

challenges of the rhino reintroduction and the future of the programme.

Rhinos are under pressure for many reasons and have already once suffered local extinction in Zambia. Can North Luangwa National Park support a healthy black rhino population? Yes. There is no doubt there are challenges, though. The Zambian black rhino population was poached to extinction in the 1980s and a lot of suitable habitat has been lost over the last century. However, Zambia still has significant land under protection of which

the North Luangwa ecosystem is a relatively pristine 22,000 km², with the National Park at its heart. The current rhino population is

intensely protected. We support the national

authorities and the local communities to put in effective law enforcement and I believe

that if we can win the battle against the cur-

rent severe poaching threat, then this popu-

A massive effort and the risk of failure is ever

present. We focus on two things: long-term

engagement and partnership. All the stake-

holders - the national authorities, the local

communities and ourselves - need to have

in place a long-term strategy that establishes

a safe haven for rhinos. This safety can only

be assured if we work closely together. Suc-

cess takes dedication, motivation, discipline

and trust from the daily task of boots on the

the most senior government authority.

programme from the local communities?

Yes, we do. The communities have been

involved in the process from the start and

the rhinos have created jobs for new scouts

and other programme staff. The rhinos act

as a flagship for the North Luangwa eco-

system and are a focus for raising funds and attention from donors and the Zambian

government, be that road maintenance, or

rural electrification. The more our partner-

ship with the national authorities achieves,

the more support we attract both for wild-

life conservation and for the North Luangwa

communities.

Do you feel there is support for the

lation will become very significant.

What does it take to protect rhinos

from poachers?

There is no conflict between rhinos and local communities. However, there is always a more general rift between humans and wildlife which we believe could be addressed through a range of strategies such as participatory land use planning, equitable sharing of revenues from wildlife, supporting adherence to national and customary laws, and engendering community ownership. In terms of ivory or rhino horn poaching, we need to appreciate that as long as there is lack of employment opportunities and general rural poverty, there are always going to be criminal syndicates tempting local community members to facilitate or to undertake the poaching of high value species.

How is the North Luangwa rhino population doing today?

ground right up to real commitment from They are doing well. We have had a very good number of calves born, but a few rhinos have died naturally, from a variety of causes such as old age, fighting and disease. All part of the challenges facing such an ambitious reintroduction project. Our monitoring system aims to sight each animal at least twice a month to maximise the chances of picking up signs of any problems.

Are you planning to introduce more rhinos?

All of the rhinos we have brought in originated from South Africa. It would be great if we could add a bit of diversity to the current gene pool. The closest living relatives to the original Luangwa Valley black rhinos are the Zimbabwean Zambezi Valley animals. The introduction of a small number of these

animals to the North Luangwa population would be a great boost.

In a perfect world, where do you see the programme in ten years?

In a perfect world the black rhino population is free from the poaching threat and growing. Plans could be put in place to establish black rhino populations in the bordering Game Management Areas where community ownership needs to be increased and revenue benefit sharing improved so that communities value their wildlife but can also live within the limits of the ecosystem. We see a secure and increasing elephant population. But all this needs to happen under a comanagement framework consisting of national authorities, community stakeholders and us - with full revenue retention and decentralised decision-making.

What challenges need to be addressed?

There are many challenges but I think primarily we need to focus on tackling the organised criminal syndicates targeting the elephant and rhino populations - they need to be identified, arrested and prosecuted. Concurrently, the national policy should enable the breaking up the current Game Management Areas concessions into mixeduse village level concessions, for example photographic tourism, safari hunting, game ranching and forestry management. With community ownership there will be the potential to encourage investors and commercial development, which will create jobs and sustainable revenue.

BLACK RHIND FACTS

CURRENTLY THERE ARE 5,055 BLACK RHINOS IN AFRICA. THEY BELONG TO 3 SUBSPECIES: EASTERN BLACK RHINOCEROS, SOUTH-WESTERN BLACK

RHINOCEROS AND SOUTHERN-CENTRAL BLACK RHINOCEROS.

WEIGHT: 🔘 Adult male $\pm 1,500$ kg Females $\pm 1,200$ kg Calf at birth ± 40 kg

SPEED: 🔘 Up to 55 kmph

LIFESPAN: 🔘 About 35 years in the wild

BEHAVIOUR: 🔘 Mainly solitary nocturnal browsers

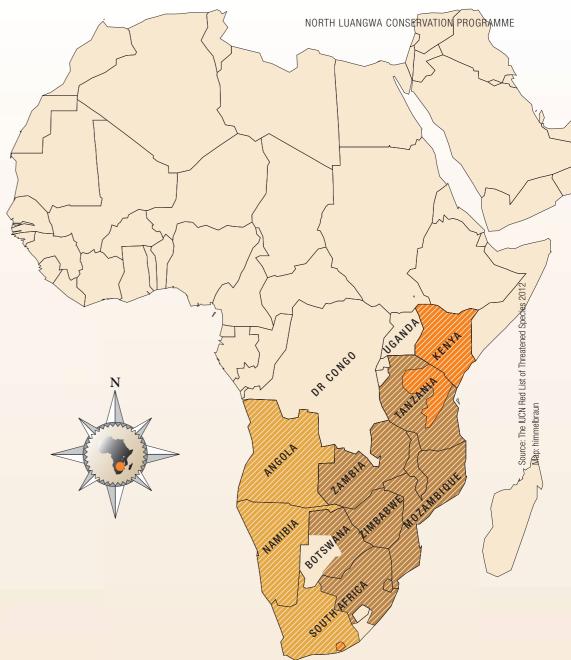
MATURITY: 🔘 Females at 5 – 7 years, males at 7 – 8 years

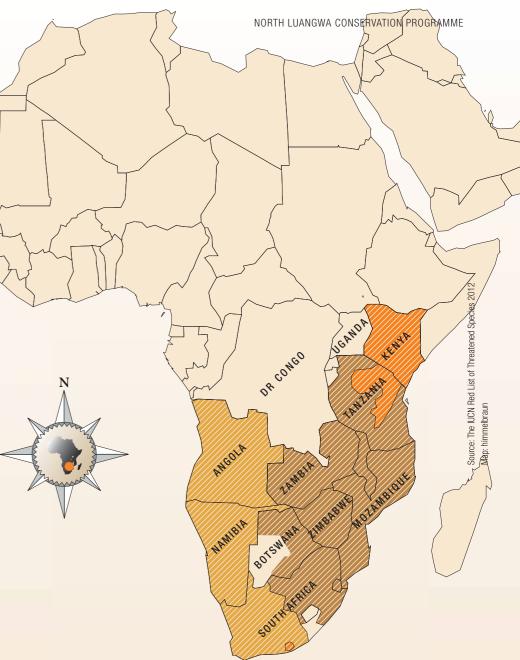
GESTATION: 🔘 16 months producing a single calf. Mother and calf stay together for 2 – 3 years until the next calf is born.

> IUCN RED LIST CATEGORY: 🔘 Critically Endangered

MAIN THREAT: 🔘

Poaching for the international rhino horn trade. In the 19th century, black rhinos numbered 'several hundred thousands.' Hunting severely reduced numbers but poaching escalated in 1970s and 1980s and North Luangwa rhinos became extinct. Horns were once used for dagger handles in Yemen but today the biggest demand is for use in traditional medicine in the Far East, particularly Vietnam. Horns are made from keratin, similar in substance to human fingernails.





GEOGRAPHIC RANGE OF THE BLACK RHINO SUBSPECIES

Eastern Black Rhino (Diceros bicornis michaeli)

South-western Black Rhino (Diceros bicornis bicornis)

Southern-central Black Rhino (Diceros bicornis minor)

Source: IUCN African Rhino Specialist Group, 2011

Total number: 799

Total number: 1,957

///// Total number: 2,299

FRAGILE FREIGHT RHINOS RETURN TO NORTH LUANGWA

Reintroducing a species to a former habitat is a challenge of overcoming the reasons it disappeared in the first place. For the black rhinos of North Luangwa this means protecting them from poaching. But in the early years of the rhino project, it was also a matter of personal commitment, innovation and flying skills, as the project leaders at the time, Elsabé and Hugo van der Westhuizen report.

When we arrived in North Luangwa in 1997, we were immediately taken in by the remoteness and vast wilderness. At the time, there were still reports of rhino sightings and we were convinced that there were still some surviving rhinos from an estimated 12,000 that had existed in the Valley in the early 1970s. For the first three years we kept a continuous lookout, especially when flying – but to no avail. We had to accept that rhinos had indeed become nationally extinct in what was once one of their strongholds on the continent.

One of the main North Luangwa Conservation Programme goals therefore became to re-establish a viable, breeding population of this endangered species – not only would this add a valuable new population in one of the important range states, but it would also be an affirmation of North Luangwa being a well-managed protected area. However, much work needed to be done before this dream could be achieved. The priority was always to ensure that effective management systems were in place that enabled North Luangwa to become the safe haven it needed to be prior to the rhinos' return.

Our initial plan was rather humble. We had in mind to bring two individuals in as a trial, but it soon became apparent that the effort, funding and commitment needed to even accomplish this goal, would be better served by aiming for the number recommended for reintroductions by the International Union for Conservation of Nature.

First, a number of key decisions had to be made. The manpower in North Luangwa was at an all-time low and this had to be boosted well before the rhinos could return. Mike Labuschagne started with us in 2001 for a 2-year-period with practical, hands-on field training that saw 365 recruits graduating. Some of these rangers went to other parts of Zambia, but some still fill very important boots in the Park Precious cargo: Rhinos arrive in North Luangwa.

today. Secondly, a big decision was whether to 'free release' the rhinos or use a fenced sanctuary. A low-level 3-strand fence was decided on to keep the animals in an area where security and monitoring could be maximised. The fence would keep rhinos in, but allow most other animals to step over or go under. This would be the first time that such a minimalist fence would be used in a project of this scale. Thirdly, a suitable area had to be identified and after many flights and walks through the bush, an area was cleared, tsetse control traps deployed and the first pole was erected for the fence in August 2002.

IMMIGRATION FROM SOUTH AFRICA

An ongoing consideration was where the rhinos would come from. But we will also never forget the moment when we received a radio Our contacts with South African National Parks proved critically message from the monitoring rangers telling us that they had picked important, and, during a visit to South Africa with the then director up the spoor of a new calf – the first to be born on Zambian soil for of the Zambia Wildlife Authority, Hapenga Kabeta, a meeting was at least 15 years, and a vindication of all the effort and hard work by held with SANParks CEO, Mavuso Msimang, and Conservation so many people to make this reintroduction a success. Director, Hector Magome. A deal was agreed for five animals to be donated to Zambia. Part of the arrangement was that a female rhino Despite some setbacks it has been immensely gratifying to see this from Frankfurt Zoo would go to South Africa to augment an imporproject grow and to realise that we played a part in what has become tant breeding programme. SANParks became, and still is, a very ima rhino success story in a time when this species has once again come portant partner in this project. under such incredible pressure.

Now there was only one issue left to sort out: how to transport the rhinos to North Luangwa. There was never any other option than flying them in, due to the long distances involved and potential delays at borders. Several airlines were contacted but the moment they heard that there were only 800 metres of usable runway they politely declined. Finally, SafAir told us that one of their C-130 Hercules transport aircraft could come from North Africa where it was involved in food relief operations.

After more than two years' worth of planning the first batch of five animals was set to arrive in May 2003. There was still a sense of disbelief when we saw the huge cargo aircraft flying overhead, coming to a standstill in a huge cloud of dust, with very little runway left and leaving 30 centimetre deep tracks behind it.

There were many significant moments during those early years. Miraculously, the fence worked and several designs later proved to be a very important tool for these kind of reintroductions across the continent. It wasn't all plain sailing, though. The 2006 reintroduction involved five animals originating from the Eastern Cape region of South Africa, from a habitat type very different from the savannah bushveld they now found themselves in. One cow stubbornly refused to eat the new type of browse and, despite some desperate efforts, this cow slowly wasted away and tragically died.



Hugo and Elsabé van der Westhuizen now lead the FZS Gonarezhou Conservation Programme in Zimbabwe.

WHY WE COULD ON LOCAL COMMUNITES

FZS' goal is to conserve wildlife and ecosystems. While we focus on protected areas and outstanding wild places, we recognise that our success ultimately depends on the local communities within these ecosystems. Local people interact with wildlife and natural resources on a daily basis, often because they are essential for their livelihoods, but also because they come into conflict.

By Karen Laurenson, FZS Africa Programme

NORTH LUANGWA CONSERVATION

Expanding human populations are the root cause of unsustainable natural resource use and habitat conversion in these ecosystems. We believe that involving the communities in management decisions is key to generating pride, social capital and socio-economic benefits and that these can in turn lead to improved conservation outcomes. Througout Africa, FZS works to empower local communities to become actively engaged in conservation.

Our strategies are tailored to the environment, needs and culture of the communities. We often provide technical assistance to aid them in implementing community-based natural resource management. We promote sustainable and productive land management to minimise land conversion to agriculture. This includes land-use planning, climate and conservation-friendly agriculture, and livestock management. We also promote alternative ways for local households to earn income and improve their livelihoods while simultaneously benefitting conservation. Taking a long-term perspective, we also facilitate and integrate with reproductive health initiatives in Tanzania and Ethiopia. Given the productivity of the ecosystems in which we work, continued local population growth will quickly or may have already exceeded the limits of sustainable use.

Our approach entails working closely with government partners as well as communities but also in building new partnerships with ex-

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pert organisations with complementary expertise. Conservation is routinely under-funded, but by pooling resources with the development sector and addressing sustainable development needs there are potentially vast gains for both conservation and human well-being.

Our biggest challenge in working with local communities is ensuring that our joint efforts actually reduce habitat loss and other adverse impacts on wildlife. Humans are incredibly complex and intelligent beings and yet still destroy or damage the environment on which they depend. Influencing this decision-making requires a long-term effort beyond simplistic solutions. Providing viable options for people and changing social norms and acceptability is vital. Thus when we engage with communities in natural resource management, we also now link the interventions and opportunities we offer to full commitment in reducing unsustainable resource use. Our community work is not about free handouts, but about the communities taking responsibility 🗄 and ownership.

RESEARCH ON POVERTY-CONSERVATION LINKAGES



The 'Conservation for East Africa's Threatened Ecosystems' project (CREATE), jointly funded with the EU, has facilitated a diverse range of research by Zambian and international students. Research has centred around a series of case studies. As part of providing a basis for these, communities were trained and mentored to establish village-level microfinance for income diversification through Community Conservation Banks (COCOBA). CREATE also supports institutional development for natural resource management.

One case study focussed on the functioning of the COCOBA savings and loans groups. Results suggest that the success of these groups depends on the levels of trust and collaboration within the group, the diversity of the group members concerning gender and age, and on the consistency of operations, i.e. meetings, frequent savings contributions, and transparent administration. Results from CREATE projects are being shared with communities and other project partners, and have also been presented at regional and international conferences.

Another study has examined the links between the dissemination of conservation information and community decisions about the use of natural resources. This has revealed that there is increasingly reduced compliance with traditional rules and norms regarding resource utilisation, fire practices, and harvesting of edible caterpillars in Mpika District. This may be largely due to a loss of traditional leaders' authority in resource management issues and is reflected in burning and harvesting practices that appear to be diminishing the caterpillar resource.

Links between livelihoods, wildlife utilisation and human-wildlife conflict have also been explored. Specifically, the consumption of bush meat in North Luangwa appears to be driven by taste preference, easy access to wildlife, and the lack of affordable alternatives

Edible caterpillars are rich in protein and an alternative to bushmeat.

such as butcheries or wildlife farming. Crop and livestock losses for farmers are the main cause of human-wildlife conflict with direct impact on livelihoods. However, research in the Mukungule Game Management Area has shown there are also hidden and opportunity costs. The need to guard crops from wildlife can reduce capacity to improve standard of living, increase school absenteeism, restrict movement and social contact within villages, and lead to greater incidence of malaria in the community.



Community visit in Zambia

"It is important to respect the people"

Frankfurt Zoological Society's North Luangwa Conservation Programme has been supporting environmental education lessons in surrounding schools since 2003. Sylvester Kampamba is the Conservation Education Officer and as a life-long local resident, he knows the reality of living on the edge of a wildlife area.

When you were growing up did you ever see yourself becoming involved in conservation?

Actually, no. I was a local resident doing 'chitemene system,' a very cheap method of farming. I was dreaming about becoming a teacher at one of the local schools. Well, things changed when I joined the North Luangwa Conservation Programme as a casual worker. It was exciting and scary when I first came into the Park and saw elephants and other big mammals. I started to appreciate the importance of wildlife and also wondered if my children will have a chance to see the play how tough it becomes the animals as well. I started to tell other people about the importance of protecting wild animals before I even became Conservation Education Officer in 2004.

What does your work involve?

We inform the local communities about the work of the North Luangwa Conservation Programme so that they are all aware of what is taking place inside the Park. We deliver conservation education lessons in schools in 21 communities. We're distributing activity books together with the teacher's manual at the beginning of the year. We're also conduc-

ting community conservation sensitisation tours and Park visits for the local children. My favourite part of my job is teaching and talking about conservation and interacting with children.

Tell me about the communities you visit.

It is quite important to respect the people in the community as they are the key people to help combat poaching. Hard work through capacity building is worthwhile and very important. Over 3,500 adults saw last year's theatre roadshow that we took around the communities. The responses were positive and very encouraging. Lots of people came and learnt about conservation. Some were saying that they will never go poaching again as they have seen through for someone caught poaching.

What do you see as the

future for North Luangwa? I see that most people in surrounding communities are appreciating our work. There is massive support. They see the potential for jobs and some of the children who have been part of our conservation education programme have finished their education and are actually working in conservation now. I hope that North Luangwa will become a destination for more tourists, which would create more job opportunities for the people living here.

What are your hopes for your own children? My hope and trust is to make sure that all my children complete their education and further strengthen their capability and build strong professional skills. I'd like to see one of my own children become a conservationist right here. They always ask me interesting questions about North Luangwa and rhinos in particular.



HEADS, HANDS, HEARTS

The North Luangwa education programme was launched in 2003 to coincide with the arrival of the first relocated black rhinos. The programme is now officially named 'Lolesha Luangwa,' which means 'look after Luangwa' in the local Bemba language. The overall aim is to create a sense of ownership and responsibility for the conservation of the North Luangwa Valley and its black rhinos using it as the focal species for engaging and educating children.

Lolesha Luangwa tackles conservation education and awareness from several angles to ensure messages are delivered and more importantly passed on to parents and the wider community. There are 21 schools taking part and four strands to the programme: a 17lesson curriculum has been developed that is taught by schools' teaching staff throughout the academic year; FZS officers deliver four special black rhino focussed presentations to each school; a community event is organised annually in each participating school community; and a specially adapted truck brings school groups into the park for overnight visits.

More than 1,500 Grade 6 (11 - 14 years old) pupils benefit each year from this award-winning, interactive and innovative programme, which leads pupils from start to end through fact-based knowledge lessons to exploring the interdependence of ecosystems, on to discovering how humans impact upon natural processes, and

finally how each and every one of us can have a positive bearing on our local environment.

At the centre of the programme we use the black rhino to illustrate each step. For example, the students will learn about mammals from their teachers during one of their school lessons, then this is reinforced with a later visit from the FZS team who deliver a presentation about black rhinos as mammals. Then ecology and rhino ecology marry, poaching and rhino poaching pair up, and conservation practices and rhino conservation are associated.

In 2015, the truck was sent on a rhino roadshow with the SEKA theatre group. They visited each of the 21 communities and performed the play 'Horn of Sorrow.' And since 2014, groups of 20 school children are brought into North Luangwa National Park to experience wildlife first hand for 3-day-visits. It is often the first time these children will see an elephant or a zebra close up. Many groups have been lucky enough to see a rhino, and the newly formed canine wildlife crime detection unit was a big highlight.

The annual cost to implement Lolesha Luangwa is about € 50,000, currently funded by Save the Rhino International, United States Fish and Wildlife Service and Disney Worldwide Conservation Fund.

EXPLORING NORTH LUANGWA NATIONAL PARK

By John Coppinger

The North Luangwa National Park is a remote tract of land in Northern Zambia, covering over 4,500 square kilometres. It offers one of the finest wilderness experiences in Africa. The Park lies on the western bank of the Luangwa River bordered further to the west by the dramatic Muchinga Escarpment, which rises over 2000 feet from the valley floor. The crystal-clear Mwaleshi River trickles down the escarpment in a series of small waterfalls and then meanders across the valley floor, representing the honeypot of the reserve and attracting hordes of animals.

The Park was originally declared a wilderness area and remained The Park had several ingredients for successful tourism development, closed to visitors for more than thirty years. In the late seventies and early eighties illegal poaching reached unprecedented heights. The elephant population was decimated and the entire black rhino population was exterminated. As a means to help curb poaching, authorities began allowing entry to a limited number of safari operators that could then bring a handful of tourists into the Park for guided walking safaris and game drives.

plentiful populations of elephant, buffalo, lion, leopard, Cookson's wildebeest, impala, kudu, waterbuck, puku, and eland and an increasing wild dog population.

By the mid-nineties the project was driven solely by the Frankfurt Zoological Society, which continues today to work with the Zambian National Park authorities. Together they nurtured and developed the





The population of African wild dogs in North Luangwa is growing steadily.

reserve making it, arguably, the best managed and most secure National Park in the country. FZS have successfully re-introduced black rhino, created and implemented a sound management plan, developed and maintained the road network, and continued to encourage and support tourism development. The achievements and improvements since Mwaleshi Camp was opened in 1990 have been substantial.

Due to the remoteness and seasonal restrictions of access leading to high input costs, tourism development is limited and primarily aimed at the upper income bracket. There are currently just two small seasonal camps in operation in the Park: Mwaleshi Camp (six beds), run by Remote Africa Safaris and Buffalo Camp (twelve beds), run by Shiwa Safaris. Both camps operate from the beginning of June to the end of October when the park is most accessible.



North Luangwa has one of the largest hippo poulations in the world

For quick access to North Luangwa, Remote Africa Safaris offers charter flights to Mwaleshi airfield in their light aircraft. The Park is otherwise accessible by road via the Great North Road or from South Luangwa National Park. Low budget, self-drive travellers are also catered for by the Camp Zambia campsites and Chifunda Community Bush Camp, both initiatives which involve and benefit the local communities.

Currently less than 500 tourists visit the Park annually, generating tourism revenues of between US\$90,000 and US\$100,000 per annum. As a consequence of the low numbers of tourists it is highly unlikely for visitors to see other people on safari which adds to the high quality of the safari experience. Though tourism remains in its infancy, it provides important income to local communities through employment opportunities.

North Luangwa National Park is a Zambian success story and potentially on the cusp of boosting tourism, creating jobs and benefitting more rural Zambians from the surrounding communities.

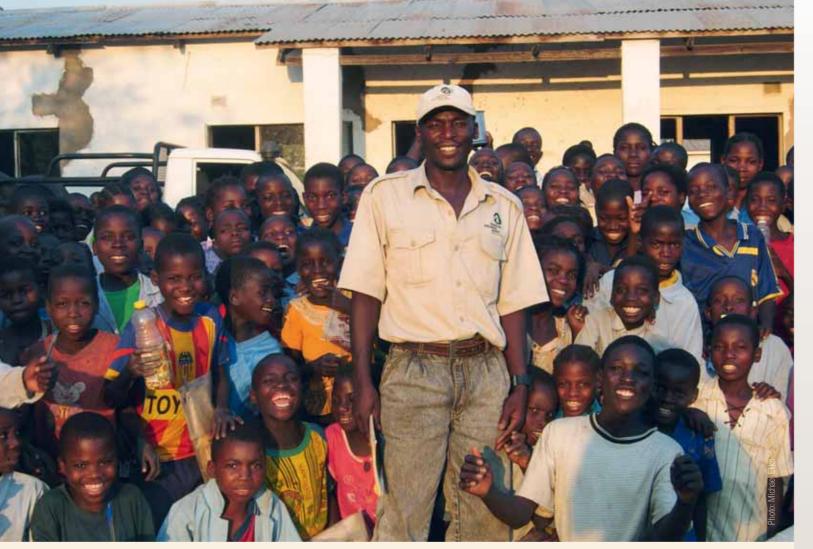


Wilderness and uptown tastes meet in North Luangwa.

MORE INFORMATION:

emote Africa Safaris: /ww.remoteafrica.com/mwaleshi-camp
hiwa Safaris: ww.shiwasafaris.com/buffalo-camp-6
amp Zambia campsites: /ww.campzambia.com
hifunda Community Bush Camp: /ww.openafrica.org/experiences/participant/1305-its-wild- hifunda-bush-camp





Conservation in North Luangwa: Local solutions of local challenges

OUR VISION FOR NORTH LUANGWA

We have a vision for the North Luangwa ecosystem that goes far beyond our current strong base.

We need to build on our partnership with the Zambian Depart- ate investors, for photographic tourism, safari hunting, sustainable ment of National Parks and Wildlife so that it fully embraces and involves the North Luangwa communities. We believe that these communities hold the key for the future of the ecosystem. They need greater ownership and benefits from wildlife as well as assistance so that they can live within the limits of the ecosystem. We need to create an attractive investment culture within the area that is based on revenue retention and decentralised decision-making. A partnership like this will create confidence for all stakeholders.

The current Game Management Areas and hunting blocks surrounding North Luangwa National Park could be broken down into already existing ward and village action group boundaries, each with a viable participatory land use plan. The communities could be set up as legal entities, able to enter into commercial leases with appropri-

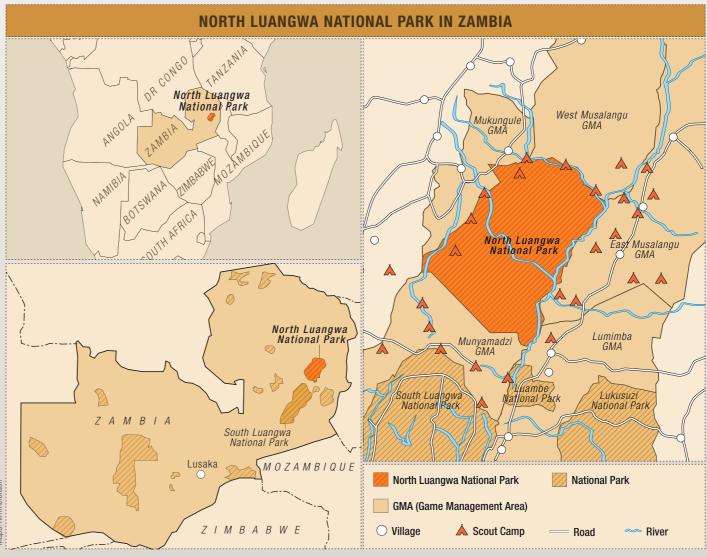
forestry management or conservation agriculture. This would create more jobs and diversify and secure revenue streams.

It might sound simplistic but structural adaptions such as these will go a long way to giving the ecosystem sustainability. The protection to date has ensured there is a healthy ecosystem, but now we need to find means and ways to improve its ability to pay for itself, whilst acknowledging the global responsibility towards endangered species conservation and preservation of wild spaces. We need to envision that communities can have a true ownership of the wildlife and land.

The North Luangwa Conservation Programme aims to deliver the long-term technical and strategic support to the communities to make this vision a reality.

THE REAL AFRICA

The Luangwa Valley extends into northeastern Zambia and is the oldest section of Africa's Great Rift Valley. The Luangwa River has shaped this unique landscape over millennia that many regard as "The Real Africa." The remote ecosystem is home to a unique and diverse species community, and is one of the last large undisturbed regions in central Africa.



NORTH LUANGWA CONSERVATION PROGRAMME PROFILE

Programme launch: 1986	F
Total supported area in 2016: 22,000 km²	(
Annual budget:	(
€ 1,200,000 Frankfurt Zoological Society and Third Party Donors € 490,000 DNPW salaries	(
More Information: www.fzs.org/north-luangwa	

Programme focuses:

- Protected area management
- Law enforcement
- Conservation education
- Community-based natural resource management
- O Black rhino project

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