



**FRANKFURT  
ZOOLOGICAL  
SOCIETY**

# **FZS ZAMBIA ANNUAL REPORT 2019**

**MAKING CONSERVATION COUNT ∞∞∞**





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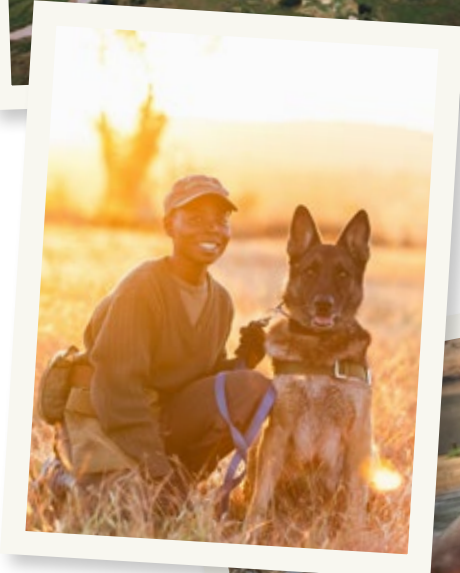




Imagery by Mana Meadows Photography & FZS

### Introduction

Frankfurt Zoological Society (FZS) was founded in 1858 and is a registered non-governmental, not-for-profit and independent conservation organization. FZS works to conserve wildlife and ecosystems, focusing on protected areas and outstanding wild places with high biodiversity and wilderness values. Worldwide, FZS supports national authorities in the management of protected areas through technical support and provision of inputs for area operations including law enforcement, community engagement in natural resource management, reduction of threats through land use planning, alternative livelihood development and human-wildlife conflict mitigation, and reduction of wildlife crime and trade regionally. FZS runs and supports more than 29 conservation projects in 18 countries in South America, Africa, Europe and South-East Asia. FZS' projects are financed through membership fees, private donations, and legacies as well as investment returns from its supporting foundation "Help for Threatened Wildlife." Increasingly, FZS also implements projects with financing from third-party development partners, other foundations and charitable organizations. FZS employs around 410 staff globally across its projects and 30 staff based at the headquarters in Frankfurt, Germany.



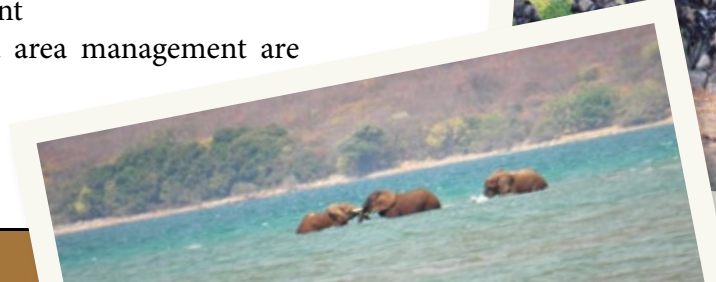
### FZS ZAMBIA OVERALL GOAL

By 2023, working in partnership with communities and government, to be the most effective in large landscape protected area management.

In order to achieve this goal, FZS Zambia implements the following strategies:

- We reduce direct threats to species and ecosystems
- We ensure effective, transparent and adaptive protected area management
- Communities are sustainably managing natural resources and generating multiple benefits
- We improve policies, legislation, partnerships and awareness contributing to ecosystem and protected area management
- Ecosystem and protected area management are sustainably financed

- We create an organizational framework that is effective, efficient and delivering project needs
- We negotiate partnerships for the improved and devolved co-management of Parks and GMAs based on revenue retention







Buffalo crossing the Mwalessi River by Mana Meadows Photography

# ZAMBIA NORTH LUANGWA ECOSYSTEM



## The North Luangwa Conservation Programme

4,636 km<sup>2</sup> | NORTH LUANGWA NATIONAL PARK

1986 | PROJECT COMMENCED

22,000 km<sup>2</sup> | TOTAL OPERATIONAL AREA

PROGRAMME LEADER | ED SAYER & CLAIRE LEWIS



A PARTNERSHIP BETWEEN  
Department of National Parks and Wildlife Zambia  
& Frankfurt Zoological Society





# PRISTINE WILDERNESS LANDSCAPE AREAS TEEMING WITH WILDLIFE

## History and Background

In 1986, Frankfurt Zoological Society (FZS) began its partnership - the North Luangwa Conservation Programme (NLCP) - with first the National Parks Service, then with the Zambia Wildlife Authority (ZAWA), to be continued later with the Department of National Parks and Wildlife (DNPW) to protect and manage North Luangwa National Park (NLNP) in north-eastern Zambia. In the past 34 years, NLCP has grown into one of the most comprehensive and successful protected area conservation initiatives on the African continent. NLCP's operational area comprises not only NLNP but significant swathes of the surrounding Game Management Areas (GMA), covering >22,000 km<sup>2</sup> of the greater North Luangwa Ecosystem (NLE). NLCP aims to nurture the ecosystem's human and wildlife populations through ecologically sound protected area management; community based natural resource management; front line law enforcement operations; reduction of wildlife crime and trade in northern Zambia and across international borders; wildlife-based business enterprise development and extensive employment; and educational awareness in associated rural communities.

## North Luangwa Ecosystem

NLCP supports conservation activities across the NLE rural community and wildlife conservation landscape, which boasts breathtaking topography and serves as a haven for iconic species. The ecosystem is of international conservation importance as home to significant wildlife numbers; in particular, NLNP boasts Zambia's largest and fastest growing elephant population, and its only black rhino population.

## Ecosystem Monitoring

By conducting extensive ecosystem and species monitoring the NLCP team is able to measure the effectiveness of its activities, which primarily centre on black rhino and elephant population monitoring. Species monitoring is not merely to 'know where everyone is', but to use this known location data to constantly update the partnership interventions across the entire ecosystem.







VHF Rhino monitoring in the sanctuary. Below: 'Shungu' the black rhinoceros. Images by Mana Meadows Photography

## Black Rhino

Twenty-five rhinos were introduced from South Africa between 2003 and 2010, with a further two Zimbabwean bulls introduced late 2018. To date no rhinos have been poached in NLNP since this population was established. North Luangwa's black rhino population continues to show one of the highest growth rates in Africa and is now classified as a Key 2 population by the African Rhino Specialist Group (i.e. the population is increasing or stable and n = 51-100, OR or n = 26-50% of subspecies). The DNPW Rhino Monitoring Unit (RMU) spoor track and monitor individual rhinos through telemetry/transmitter technology to provide up-to-date spatial information for an adaptive security and management strategy. The RMU is tasked with visually sighting each black rhino 1-2 times per month; and using the spatial information gained to deploy security patrols for maximum protection of the black rhino population.



In 2019, the RMU recorded 565 visual observations of individual rhinos from the ground as well as obtaining daily VHF transmitter signals for all applicable animals. NLCP inserted VHF transmitters and SigFox tags into multiple individuals, as well as conducted ear notching on younger animals for identification.

Two

males translocated from Zimbabwe in December 2018 were held in bomas, and in January 2019, the adult male, Shungu, was released. He did not disperse as hoped, but continued to reside and be supplementary fed near the airstrip for the whole year. As a consequence of Shungu's proximity and his lack of respect for electric fencing, it was necessary to hand-dig a trench around the younger male's (Bashe) paddock to prevent

them fighting. In March 2019, Bashe was released into the 17-ha paddock where he lived throughout the year being supplementary fed. Plans are in place to relocate both animals into the wider NLNP rhino conservation area in January 2020.

## African Elephant

Currently, the team monitors 2 satellite-collared elephants in NLNP, and 13 in the GMAs where perceived poaching pressure is at its highest. Tracking of these elephants provides data on their movements which can be analysed by season, proximity to humans, and level of threat. This is particularly relevant to areas where resources for protection are limited – being able to monitor elephant movements provides NLCP with the data to target protection of this iconic species. Despite the ongoing current poaching crisis, North Luangwa's elephant population continues to recover and successfully utilise a vast range across the wider ecosystem. At protected area level, NLNP is home to Zambia's most stable and only increasing elephant population. The elephant population inside the NLNP has grown from fewer than 1,000 in 1998 to about 5,600 individuals inside NLNP and part of the surrounding GMAs, and an estimated 11,000 individuals in the wider NLE.

Figure 1 shows the estimated elephant populations from aerial surveys conducted over NLNP and portions of its adjoining GMAs since 1998, showing



The elephant population across the wider NLE operational area (including all the GMAs) is harder to depict as there has been a significant increase in NLCP's geographic reach since 2014. However, since the last survey in 2015 there has been a continued upturn in elephant poaching elsewhere in the country whilst the NLE has observed a decrease in elephant poaching; therefore, the estimated NLE operational area elephant population is thought to be approximately 11,000 individuals.

In 2019, seven poached carcasses were detected – 1 in NLNP and 6 in the GMAs. This is a huge improvement and continues to build on the relentless efforts placed at all levels in NLCP's strategies to reduce direct threats to species and ecosystems, and the implementation of effective, transparent and adaptive protected area management to combat the illegal wildlife trade.

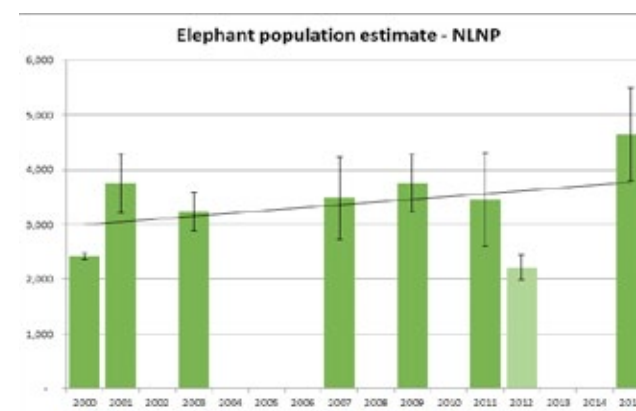


Figure 1: Number of elephants in the NLE; 1998-2019 (2012 was a wet season survey when leaf cover prevented accurate counting)

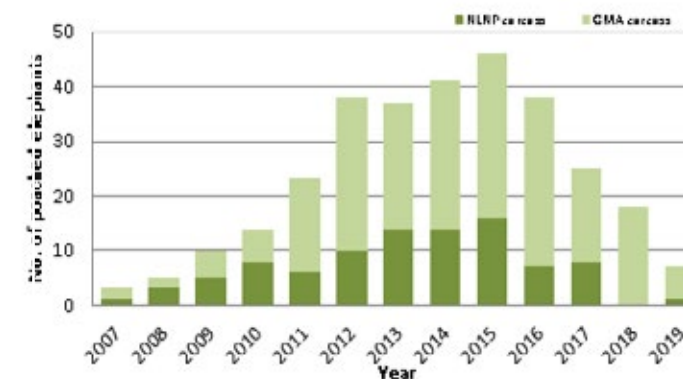


Figure 2: NLNP and GMA elephant carcasses recorded 2007 - 2019



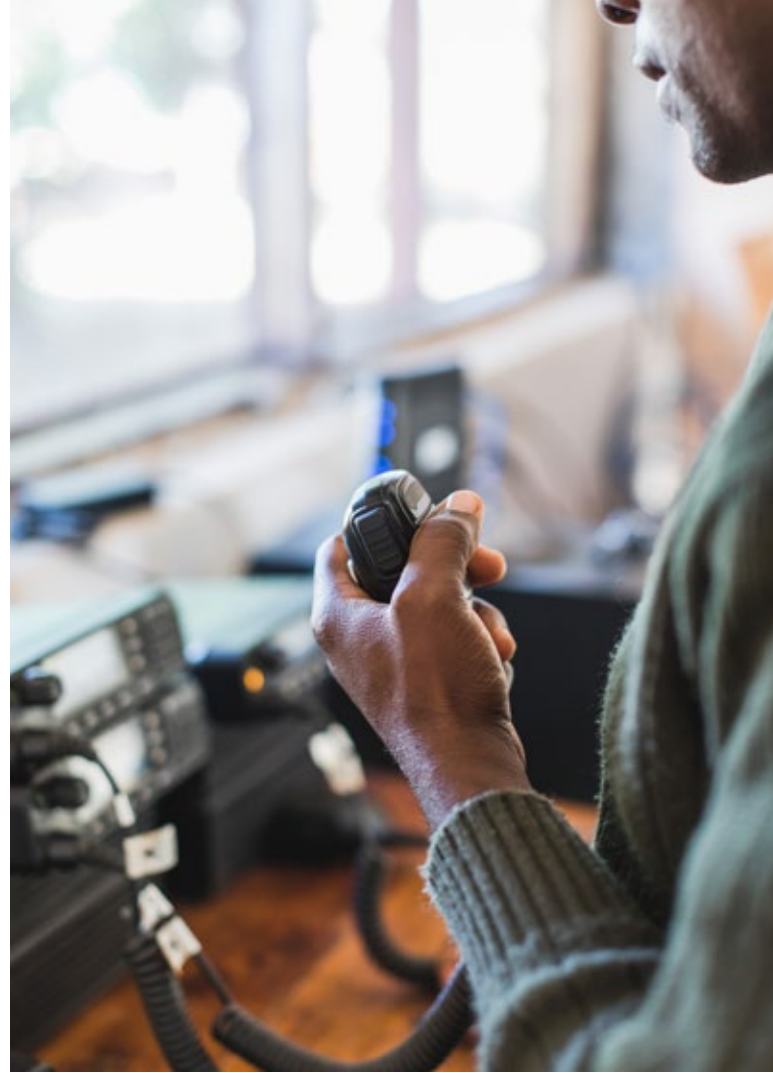
## Resource Protection

NLCP's highly effective, adaptive, technologically equipped and strategic law enforcement effort in the NLE appears to be holding back the rising tide of elephant (and therefore rhino) poaching that is affecting other parts of Zambia, and Africa in general, where poaching figures are rising exponentially year on year. NLCP continues to strategically assess its geographical reach and provide resource support to an ever-increasing suite of enforcement agents.

Results in 2019 are reflective of this effort and can be attributed to a number of strategies, but primarily: the foot- and aerial-patrol coverage across the entire area; the uplifting of skills through regular in-service training; maintaining and increasing manpower numbers through local recruitment; the ongoing upskilling of the Rhino & Elephant Protection Unit (REPU) and the Canine Unit; and the ongoing (since 2012) establishment, training, resourcing and support to the seven NLE DNPW Intelligence & Investigations Units (IIU) as well as additional supervisory and coordination support to three provincial IIUs. Alongside traditional law enforcement efforts sit the influence of the FZS North Luangwa Ecosystem Project community-based natural resource management work to support communities in the adjoining GMAs: to empower their conservation vision for the area through participatory decision making and equitable revenue sharing; to reap the benefits of the maintenance and expansion of infrastructure and logistics provided by NLCP across the ecosystem; and the messaging of the NLCP Lolesha Luangwa conservation education programme.

The NLE anti-poaching force currently comprises of 364 scouts with a total complement of 150 DNPW Wildlife Police Officers (WPO) and 214 Community Resource Board (CRB) Community Scouts (CS) in 34 base camps. They are supported by NLCP to conduct day-, short- and long- anti-poaching patrols. Ninety-five of those officers are attached to the centrally based REPU, which includes 44 officers in the Rhino Monitoring Unit, 33 in the REPU mobile patrols and 13 officers in the North Luangwa Canine Unit.

A total of 744 foot patrols were carried out in 2019 covering 23,224 km involving 17,854 man-days. Foot patrols accounted for 250 (out of a total 593) records of illegal incidents / poaching activity and were responsible for 87 arrests, confiscating 31 firearms, 330 pieces of ammunition and 192 kg of bush meat. In addition to every-day anti-poaching activities in



2019, three Operations Clean Sweep targeted specific problem poaching areas by deploying six foot-patrol teams, one canine tracking team, one visual tracking team, aerial support from the Husky and a contractor helicopter when available.

NLCP has utilised Earth Ranger to be able to track and monitor all trackable assets across the ecosystem for improved management and strategy. 2019 saw the addition of a SigFox network that has improved the live time tracking of rhino, vehicles and scout units.

### Intelligence-led approach

NLCP established the Mpika Intelligence and Investigations Unit (IIU) in 2012 and has since increased its support by raising funds for in-service and new officer training; advanced surveillance training; and equipping, mobilizing, resourcing and coordinating support to a total of now 10 IIUs and two canine units to as far as the Tanzanian border.

In 2019, the IIUs supported by NLCP completed 297 arrests and confiscated 294.5 kg ivory, 11 live pangolins, 3 dead pangolins, 115 pangolin scales, 545.2 kg bush meat, 66 firearms, and 612 rounds of ammunition.





## North Luangwa Canine Unit

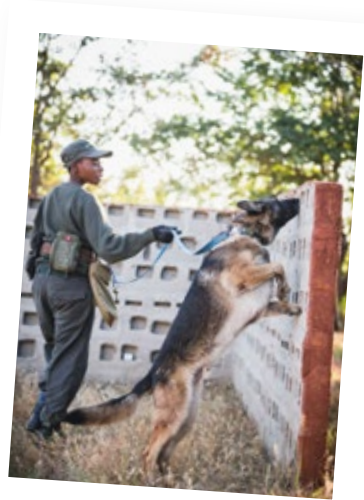
The North Luangwa Canine Unit (NLCU) is led by a senior technical advisor, who manages 13 handlers, five dogs, and four vehicles. The canine team currently consists of six new recruits (initial training completed and in-service training ongoing to reach international certification standards), two Handlers, two Master Handlers, two Senior Master Handlers, one Trainer and one Instructor. NLCU teams conduct road blocks, vehicle and building searches throughout the ecosystem and are deployed in support of the IIUs and intelligence-led operations. The dogs are able to track suspects and detect ivory, rhino horn, bush meat, pangolin, lion/leopard skins, firearms, ammunition and mukula hard wood.

In 2019, the senior technical advisor continued to provide handler, canine and operational mentoring and training to the NLCU. Standard operating procedures were implemented and training records maintained. The NLCU carried out 595 days of operations including

141 road blocks (19,145 vehicles), 98 village sweeps (1,932 buildings), and found 230 targets and effected 165 arrests. Items found included 25 kg ivory, one lion skin, 28 pangolin scales, 154.7 kg bush meat, 136 firearms, and 119 rounds of ammunition.













In May 2019, two handlers attended the annual canine working dog workshop in Kenya organized by Save the Rhino International and Working Dogs for Conservation, which provided a valuable opportunity for exchange of experience with other canine practitioners across Africa. Workshop topics included veterinary, operations, tracking, detection and physical therapy classes; and a site visit to Old Jogi and Lewa canine units in Kenya.

The NLCU expanded its reach and established a second unit at the Tanzanian border at Nakonde to monitor cross-border trafficking of illegal wildlife products.



The NLCP Canine Unit in training. Images by Mana Meadows Photography

## IMPACT 2019

	 <p>0 rhino poached 3 rhino calves born</p>
	 <p>1 poached NLNP 6 poached GMA 38 seizures</p>
	 <p>167 firearms confiscated 1,061 pieces of ammunition</p>
	 <p>744 foot patrols &gt;23,000km &gt;17,000 man days 87 arrests 31 firearms 330 pieces of ammunition 2 elephant related seizures 192kg bush meat</p>
	 <p>297 arrests 66 firearms 612 rounds of ammunition 294.5kg ivory in 36 elephant related seizures 545.2kg animal parts and bush meat 11 live pangolins 3 dead pangolins 115 pangolin scales</p>
	 <p>595 days operations 141 road blocks (19,145 vehicles) 98 village operations (1,932 buildings) 165 arrests 230 targets found: - 25kg ivory - 1 lion skin - 136 firearms - 119 rounds of ammunition - 154.7kg animal parts &amp; bush meat - 28 pangolin scales</p>



## Aerial Surveillance

In order to provide essential aerial monitoring support to the ground-based teams, NLCP's Aviat Husky is regularly flown by the NLCP Programme Manager and completed 243 hours in 2019. All flights supported law enforcement and monitoring of the ecosystem, with the exception of a few flights to Lusaka for maintenance (every 100 hours). In NLNP, 2-7 flights were conducted per week (depending on needs and weather conditions), complementing the ground efforts and informed by the NLNP Control Room. Flights include tracking specific individuals (rhinos and elephants) as needed, support for collaring operations, general aerial surveillance and patrol support, as well as being a visual deterrent to potential poachers ('eyes in the sky').

Flight times vary dependent upon daily needs, but mostly flying is done in the early morning for general surveillance, rhino tracking and when smoke (from a poachers' fire or arson burn) is likely more visible. Late afternoon flights are especially useful for elephant observations as this is the time they invariably head to or from water. For elephant and rhino operations (collaring, etc.), the Husky is used to support 'top cover' throughout the day; and for specific poaching hot spot surveillance, flying in the mid to late morning is usually best, to use vultures (once air thermals rise) to guide the observer to carcasses.

## Capacity Building and Training

44 new recruits from NLE communities were trained by Mellivora April-June 2019. Thereafter, 30 passed REPU selection training to join this elite unit, while the remainder joined other units for anti-poaching deployments. Of the 30 selected for REPU, six have gone on to qualify as canine handlers and have been deployed as of December 2019. The increased manpower within REPU means the RMU has increased its manpower numbers from 10-12 to 20 per deployment, and DNPW is able to deploy five REPU mobile patrols (up from three). Additionally, a visual tracking team has been established and is being deployed as a dedicated tracking unit to cut for spoor or follow up when spoor has been detected by another patrol team.

NLCP completed in-service training for all 200 out laying sector DNPW WPOs and CSs. This is the first time that NLCP has been able to complete this exercise for the entire NLE, and it will be repeated in 2020. In

October 2019, a 3-stage IJU advanced training course was carried out by Rod Potter and Wayne Evans: advanced, Train-the-Trainer, and in-service refresher training.

Mr James White has been appointed as the FZS Zambia Law Enforcement Technical Advisor. James, previously of Mellivora, completed the REPU selection course, and joined daily operational briefings, planning sessions and deployments to provide ongoing long-term mentorship to the REPU commanders and teams. In December 2019 he spent four days with the Gonarezhou Conservation Trust in Zimbabwe to gain experience and insight.

To improve and increase capacity in the central control base at the NLNP airstrip, from where all communications and operations are coordinated, four new control men / women have been trained to operate the radio network and complete data inputting for law enforcement monitoring.



*Illegal logging and transport truck spotted from the Husky*



*Vhf tracking antennas attached to wing struts on the Aviat Husky*



*Refuelling the NLCP Aviat Husky*



*NLCP pilot flying the Aviat Husky in NLNP; Below: In-service training in NLNP. Images by Mana Meadows Photography*

As part of NLCP's ongoing leadership development, it has secured a place on the Wildlife Management Certificate course at the Southern Africa Wildlife College (SAWC) for the REPU Commander, Paimolo Bwalya, who will begin the course in January 2020. NLCP will put through a second REPU commander in 2021 and follow this up with both candidates attending SAWC to attain Wildlife Management Diplomas. NLCP has also been able to support the NLNP Principal Ranger to pay course fees for his part-time BSc Degree in Science, Wildlife and Natural Resource Management at the Livingstone International University of Tourism Excellence and Business.







Newly constructed scout pickets, with solar charging stations and boreholes

## Infrastructure Development

Pickets are simple shelters with space for sleeping and storage, cooking, water provision, ablutions, and radio charging. The buildings are low cost, low maintenance, low impact but provide an essential function for welfare, security, and morale of the fence and RMU teams offering them a safe, dry and sheltered space to decamp each night. In 2019, three RMU pickets were built and a further two refurbished; additionally, two REPU security pickets were constructed to support NLNP security.

With a growing black rhino population comes ever-expanding home ranges, which require increased levels of monitoring. The improvements to the road network enable the RMU (and other anti-poaching units) to penetrate throughout NLNP to achieve this and maintain observation targets of the entire population. Therefore, NLCP continues to develop its road-network reach with ongoing access-related roadworks over bridges, drifts and crossings, completing eight bed-level drifts, one 78m hill ramp, two check dam rehabilitation sites, one culvert bridge construction, one 180m cut-off drain, 15 cross-drains, and one bridge repair in 2019. Funding from several donors has supported canine unit operations and development with a significant step forward in the completion and operational functionality of the Nakonde kennels and IIU offices. They are now able to carry out regular / frequent operations along the Tanzanian border up to Lake Tanganyika, which was previously a challenging undertaking, given that the North Luangwa Canine Unit is based some eight hour's drive away.

## Maintenance of Infrastructure and Equipment

The NLCP workshop and maintenance department forms the beating heart of all protected area management activities. Maintenance and repair of vehicles and equipment is essential for infrastructural development works and functional law enforcement to be able to plan and deploy patrols reliably, distribute rations, react rapidly to intelligence reports, respond to wildlife conflict situations, attend court sessions and facilitate transport of arrested poachers. Therefore, a very important part of the support offered to DNPW is the vehicle and equipment maintenance programme carried out by a team of 10 NLCP mechanics at the workshop in central NLNP. The current vehicle fleet maintained by NLCP includes: 1 grader, 3 trucks, 3 tractors, 3 Polaris quad bikes, 11 motorbikes and 33 cars (Toyota Hilux, Toyota Prado, Toyota Land Cruiser). Each of the vehicles is brought to the NLCP workshop for scheduled servicing and repairs every 5,000 km. The workshop is also responsible for the repairs and maintenance of multiple other mechanical items (such as generator sets, solar pumps, submersible pumps) and the routine checks and maintenance of the solar power systems to provide electricity and internet at NLCP and REPU offices, and radio communications across the ecosystem. Furthermore, the workshop comprises a section dedicated to construction which includes fencing, welding and carpentry.

# INFRASTRUCTURE 2019

## Causeways, roads, scout pickets and borehole developments



Mwaleshi bridge retaining wall construction in dry season



Completed works and Mwaleshi River in flood



Bed-level drifts to enable year-round access throughout the Rhino Conservation Area



Before (left) and after (right) construction of the concrete hill ramp to Mvuvwe Picket



Check dams restrict and slow the flow of water run-off and erosion



Boreholes constructed at the new scout picket locations

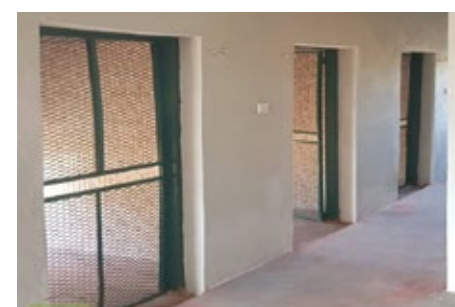


Before (left) and after (right) construction of the concrete hill ramp to Mvuvwe Picket



Access to Mwaleshi Picket improved with construction of a culvert drift

## Nakonde Canine Kennels



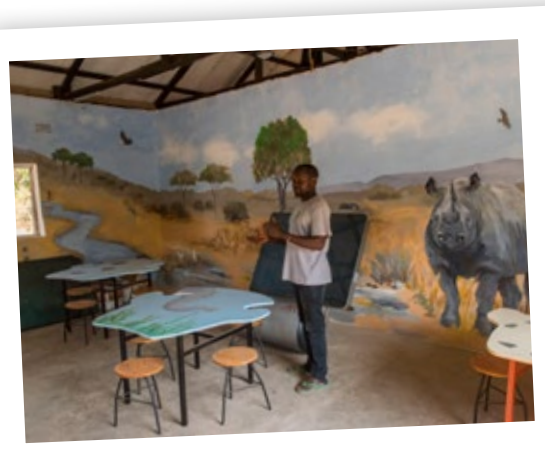
Completed kennels with secure outdoor dog runs, kitchen area and handler sleeping quarters



## LOLESHA LUANGWA MEANS LOOK AFTER LUANGWA (BEMBA)

### Conservation Education: *Lolesha Luangwa Programme*

Lolesha Luangwa (LL; 'Look after Luangwa') – NLCP's conservation education programme – focuses on winning the hearts and minds of local communities, teaching them about flagship species such as the black rhino, and engaging them in positive environmental action to ensure the long-term security of the species. Since 2001, NLCP has developed LL, which targets schools / communities in the areas surrounding the Park. LL has been substantially revised, improved and expanded since it began. The programme content is carefully designed to align and integrate with the Zambian national curriculum to complement and support traditional anti-poaching measures, build environmental knowledge in local communities and disseminate specific conservation messages to these communities, using schoolchildren as message multipliers.



In 2019, NLCP continued to implement its LL programme with teacher-taught lessons, outreach presentation deliveries, teacher workshops, and school Park visits. Master's graduate Henry Sikapite was recruited to lead the programme, extensive

monitoring and evaluation planning was conducted, and research and data collection carried out.

In 2019, Lolesha Luangwa worked with 22 conservation teachers in 22 schools in the NLE and reached 1,803 learners with its activities. The children not only participated in classes delivered at their local schools, but most importantly enjoyed field trips into North Luangwa National Park to experience its outstanding wilderness and wildlife species first hand, an essential activity to reach the hearts and minds of the children. In 2019, a total of 11 park visits were conducted for 222 learners and their teachers, which were extremely well received by both learners and teachers. Three teacher workshops were held with a total of 40 teachers to discuss and jointly develop the future of the programme in

order to achieve the best possible results.

One of the most strikingly positive effects of LL became most apparent when the new cohort of field rangers were recruited in 2019. Of the 45 rangers who successfully graduated training, 25 were ex-Lolesha Luangwa learners from the surrounding communities of North Luangwa National Park.





## Cross-sector Coordination

NLCP forges strong links with multi-agency offices throughout the Mpika District, the Muchinga Province and beyond. Once per quarter, NLCP hosts the Mpika District Joint Operations Committee (DJOC) at the REPU base in central NLNP. The Mpika DJOC consists of the Office of the President, the Zambia National Service, Police, Prisons, Drug Enforcement Commission, Immigration and DNPW. Further to this, the DNPW North Luangwa Area Management Unit (NLAMU) Senior Wildlife Warden attends quarterly Muchinga Provincial JOC (PJOC) meetings and hosts an annual Muchinga PJOC visit to NLNP. To showcase these strong relationships, NLCP also hosted the Northern PJOC in NLNP in July 2019; this was important as the Nsumbu Tanganyika Conservation Programme (NTCP) falls within Northern Province. NLCP also facilitated annual District and Provincial magistrates' experiential visits to NLNP.

To coordinate and combat wildlife crime, NLCP attends quarterly and hosts annually a Provincial IIU strategy meeting in NLNP; and to complement a wider dialogue, NLCP coordinates, regularly communicates and holds digital / face-to-face meetings with Wildlife Crime Prevention (WCP) and Lilongwe Wildlife Trust (LWT); and jointly implements grant activities with Conservation South Luangwa, Conservation Lower Zambezi, Save the Rhino International and African Parks Network – Bangweulu Wetlands Project.

## Public Engagement

NLCP is aware that community-focused conservation is the key to the preservation of wild spaces for future global generations and this ground-up approach has the most chances of success. NLCP understands the importance of winning the hearts and minds of local communities, teaching them about flagship species such as the black rhino, and engaging them in positive environmental action in order to ensure the long-term security of the species.

FZS Zambia continues to play a leading role in efforts to change and update the national policy for Community-Based Natural Resource Management (CBNRM), through the support and back-stopping of the national CRB Association and CBNRM Forum, where it has engaged Government through



Imagery by Mana Meadows Photography & FZS

a Parliamentary sub-committee to look into the outdated policy on ownership, governance, decision making and revenue sharing in the GMAs that adjoin national parks and provide the essential buffer areas for large conservation landscapes. FZS Zambia recognizes that any solutions and plans for long-term conservation have to involve the people and benefit the people. Progress is being made but it is slow going. The North Luangwa Ecosystem Project (NLEP) falls under the NLCP and implements activities in support of communities in the GMAs of the NLE. It provides governance support, financial management training, technical support, development of village land-use

plans and GMA general management plans, to unify the communities to understand their resources, the law and their rights. This work has been a major contributor to the reduced elephant-poaching levels currently experienced and, with national policy change, will push this further when communities are able to be the decision makers, the area managers, and the beneficiaries of their own wildlife-based economy. Please find more details on the NLEP 2019 achievements in the next section below.







## Community Based Natural Resource Management

### Strengthening CBNRM Institutions

In 2019, FZS continued to widen and deepen its engagement with 32 communities in 5 front line chiefdoms around NLNP. As a cornerstone strategy, NLEP worked to strengthen CBNRM by continuing to build the capacity of CRBs and Village Action Groups (VAGs) that co-manage, with DNPW, the GMAs. NLEP supported the CRBs and VAGs in self-reliance by developing Standard Operating Procedures for most regular activities, such as planning and budgeting each year. FZS and DNPW also provided regular mentoring on the implementation of financial policies and procedures, which has slowly improved record keeping and reduced anomalies. Similarly, a Human Resource Management Policies and Procedures manual for CRBs was developed and training provided to the CRBs along with general mentoring around basic meetings procedures and administration.

Annual General Meetings are a key method for CRB members to hold their elected office holders to account and thus improve governance. The project has therefore worked with village communities to ensure that they are aware of office holders' roles and responsibilities and that VAGs should give feedback to their communities regularly, as well as hold AGMs. The project again facilitated these meetings in all 32 VAGs in October/November 2019 through the provision of transport funds and with the CRBs, developed agenda formats to ensure key items were covered (such as financial reports).

FZS has also been leading the development of a self-assessment and external assessment tool for CRB and GMA performance. A meeting was held to evaluate current tools, including a Governance and Management Effectiveness Tracking Tool (GMETT) developed by FZS for community conservation areas, based on the WWF METT (Management Effectiveness Tracking Tool), but adapted with several questions on Community-Based Organization (CBO) governance. IUCN documents on governance were also reviewed, given that good governance is a critical aspect of CBO functioning and issues around governance such as inequity in benefit sharing, elite capture and power imbalances within CBOs have been an important factor that has caused challenges for CBNRM internationally. This will be further developed and trialled with CRBs in 2020.

### Zambian National Community Resource Board Association

Significantly, FZS continued to provide both financial support and mentorship to the Zambian National Community Resource Board Association (ZNCRBA). The ZNCRBA represents all the CRBs in the country and has become the 'go to' organisation to lobby and pressurise government on key issues. These include particularly the back payment of monies from hunting due to the CRBs, a review of the revenue-sharing arrangements from wildlife-related revenue (hunting and photo-tourism) in the GMAs and has also driven widespread understanding and support for rapid repayment. The ZNCRBA has been instrumental in lobbying and holding meetings for a review of the policy and legislation around CBNRM

and brought many of the flaws in the current system of benefit sharing, delays or shortfalls in payments to the attention of leaders in the Ministry and Parliament. The Permanent Secretary formed a task force to review these issues for CBNRM in 2019 and a series of meetings were held to start the policy draft.

Support to the ZNCRBA culminated in a national conference in December 2019 where representatives from all CRBs, other CBNRM bodies, Government and NGO stakeholders came together to discuss key issues facing the sector. These included the arrears and benefit sharing arrangements between Government and communities and also the lack of an overarching policy and legislation framework combining all natural resources and devolving management to the CRBs for forestry, fisheries as well as wildlife. The conference passed motions to push forward with payment of the arrears as well as policy and legislation review and was broadly supported by the Minister of Tourism and Arts. This is being followed through with FZS support in 2020.

## Community Forest Management

FZS piloted the formation of two community forestry groups in Mukungule GMA, one in Nkombwa village, Mutukwe, and one, Menshi, Mukungule village in 2018. Working with the Forestry Department, these groups had gained their formal certificates of recognition by the end of 2019, but still needed additional training on resource protection and monitoring. Community members were trained in simple silviculture techniques and the resource assessment results were presented to the community before management plans were finalised. Signs to demarcate boundaries were put up. Further work is still required to develop the capacity of the community to effectively control, develop, use and sell products from their community forests along with a monitoring system.



Building on this experience, four additional areas are being developed, two in Chifunda Chiefdom (Luelo-West and Zebe VAGs) and two in Chikwa Chiefdom (Chilumba and Lilundi VAGs). Application for recognition for all four areas is still in process, but otherwise the areas have been mapped, boundaries demarcated, maps signed off by the Chiefs, a constitution for each group formulated, a committee elected, a management plan drafted and training provided in forest monitoring. The documentation is at the Provincial Forest Office for final approval. In 2020, NLEP will extend these forest areas and work to try and incorporate these community forests into carbon finance schemes, through partnership with actors with relevant expertise.



## Community Fisheries Management

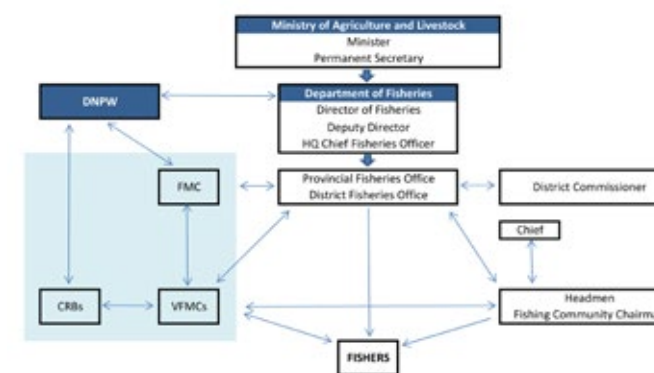
The Luangwa River and its tributaries form the basis of an important livelihood for many of the GMA communities. Whilst most households adopt mixed livelihood strategies, our baseline survey of 1000 households found they ate fish at least once a week revealing its economic and nutritional value. The economic importance of the fisheries appears to be a lot less than in the Kafue Flats area, but still is significant in the remote Luangwa Valley. For example, in Chifunda chiefdom with 150km or river frontage, around \$15,800 worth of fish a year was estimated to be caught and fishing effort was relatively constant between the chiefdoms and ranged from 3.4 days fished per week in Chikwa to 2.2 days fished per week in Chifunda.

There are two distinct fisheries in the North Luangwa by different user groups: 1) A gill net fishery in permanently wetted areas (main river channel and permanently inundated oxbows) utilised predominantly by groups of men, along with hook and line methods; 2) A traditional basket fishery in seasonally desiccated areas (lagoons, oxbows, floodplains that dry every year) utilised predominantly by groups of women and children. As the second fishery utilises temporarily inundated areas where fish become trapped as flood waters recede and thus do not contribute to future generations, it is likely to be more sustainable than the gill net fishery



in the main river channels and oxbow lagoons. The second phase of the fisheries catchment assessment took place in late June 2019 as the area opened up. Fishing effort as measured by number of fishers per day was higher in June than October, due to the preponderance of fishing by women in the flooded areas, but the numbers of days fished per fisher per week was higher in October than June. The fishery appears to be predominantly artisanal, and whilst some was earmarked for sale, a large proportion of the catch was either consumed by fishers while fishing, bartered or kept for home consumption.

The main river fishery was dominated by 2-inch mesh gill nets in the 2018 October low flow survey, but 3-inch mesh gill nets became more common amongst surveyed fishers in Chifunda during the June survey in 2019. Indeed the survey revealed that many species were being captured before size at maturity, which would be unsustainable in the long term. Introduced Nile tilapia forms a part of the fishery, however, as a result two species may be lost due to extensive hybridisation. Being a remote and relatively small fishery predominantly fished by locals in an area with strong traditional governance, the North Luangwa fishery should be relatively easily managed. During the period of the survey, the majority of the fisheries governance and enforcement appeared to be carried out by DNPW. However, thirteen Community-based Fisheries Management Groups (CFMG) were set up in late 2018-2019 with the Department of Fisheries, in



Credit: Modified from Cowx, I.G., Kalonga, M., 2013. Bangweulu Fisheries Management Plan (2013-2018)

Nabwalya (Pelemba, Kapangula, Chilima, Kazembe, Kalimba VAGs); Chifunda (Luero-west, Luero-east, Zebe and Kalasa VAGs); Chikwa (Kanga, Chilumba, Lilundi and Lumezi VAGs). These groups and their 10-person committees were trained in all national legislation and byelaws. They have selected fish monitors who patrol the area to detect illegal activities. The committees have come up with workplans and have started conducting patrols on the Luangwa River and the big lagoons and were provided with basic equipment (overalls, boots) to also help them patrol at night (torches). Early perceptions by the fishing groups is that catches are improving, although it is very early days. A Luangwa Fisheries Management Plan was drafted which outlined the role of the CFMG but needs further discussion with stakeholders. Importantly there is a need for a sustainability plan for the groups and a legal framework that would allow CFMGs to receive revenues from fishing licences and use for fisheries management and monitoring to fund their operations.



## Participatory Village Land-use Planning and Agricultural Field Mapping

Land-use planning in the GMAs, where people and wildlife live side by side, is a key activity that underpins strategies that reduce land conversion rates and human-wildlife conflict. Throughout 2018 and 2019, FZS therefore worked with communities to develop land-use plans in all 32 villages adjacent to the NLNP. Over a series of meetings, villagers mapped their current land-use and features, before going on to vision the land they would need for development and agriculture over the next ten years. Villagers also set aside GMA land for safari hunting, photo tourism, community forestry or other activities. In a bottom up approach, these zone maps were combined at chiefdom level after further rounds of discussion and signed off for incorporation into respective General Management Plans, awaiting approval by DNPW. Next steps include zone publication and consultations with the customary leadership in each area to devise a monitoring and enforcement system with inbuilt incentives for the monitors.

As part of ensuring village land-use boundaries are adhered to, the project is piloting an agricultural field mapping approach. This involves using a system where GPS locations of field boundaries are automatically recorded on tablets. After a series of meetings with chiefs and other members of the customary leadership in Chikwa and Chifunda, village land committees were set up in the 4 pilot villages. Shared







resource maps were produced and digitized and community surveyor teams were trained in field parcel demarcation and recording on the tablets. Data from the mapping is uploaded into the cloud when there is internet access. This work will be completed in 4 trial villages in 2020 and, if successful and if extra funding can be found, rolled out to additional villages. Generally, this will increase awareness of zone boundaries but importantly, give security to farmers on the status of their land. Maps of all parcels will be held by the customary leadership and the scheme may proceed to providing farmers with full certification if successful.

## Mitigating Human-Wildlife Conflict

NLEP have been scaling training and other mitigation measures for human wildlife conflict (HWC) in the NL chiefdoms. HWC occurs as human injury or death, crop losses (85% of incidents) and livestock (particularly poultry) losses.

Before the 2018-2019 growing season, NLEP identified high risk areas and started a programme of training communities and piloting mitigation techniques that included crop guarding with watch towers, patrols and blasters using chilli, as well as other chilli-based activities such as fences or chilli smoke bricks that might deter elephants from entering fields or destroying grain stores. After initial training, four experimental field blocks were set up with night watchtowers, and back-up chilli blasting patrols were trained and deployed when elephants or other species were a threat. Tools and materials for guarding and blasting were provided to 4 blocks in

the 2018-2019 growing season and for 16 blocks in 2019-2020 with the chilli blasters constructed in the workshop in NLNP. CRBs/VAGs employed the teams with a grant from FZS.

These initial interventions showed a significant reduction in incidents, with only 0.03 incidents/week on guarded and 7.95 incidents/week on nearby unguarded plots. The area of damage by elephants was just 0.001 hectares/week compared to 0.66 hectares/week on unguarded plots.

Over 600 farmers have now been trained in chilli growing, harvesting, drying and storage because chilli is used in many HWC mitigation techniques and also is a potential cash crop if market chains can be found. Nearly 1,400kg of chilli was produced in 2019, with particularly good harvests in Nabwalya and Mukungule chiefdoms. The chilli was retained for local consumption, bought by the project for use at new sites as seed, or utilised for chilli-based mitigation measures. These methods, which were incorporated into farmer training, included chilli fences to protect gardens and grain stores and chilli bricks made from elephant dung, which can be burned to produce



acid smoke.

In tandem, a simple HWC monitoring system was set up with the VAGs to try and obtain better baseline data against which to measure the impact of the mitigation measures. Tablets were used for electronic recording of information by village monitors in each VAG and regularly uploaded for cloud-based storage. Data are currently being analysed in detail.

Crops are traditionally stored in open baskets or large containers made from a netting of branches or sorghum stems. These containers can easily be accessed by elephants, causing very large losses within



Left: Community guarding of crops. Imagery by Mana Meadows Photography & FZS



a short time. Trainees were shown how to construct elephant-proof stores, used successfully in other areas in Zambia and materials provided for initial trial areas, where villagers will adopt the technique. Socially vulnerable households were provided with raw materials (cement) for grain store production and assisted with construction. Other households are being assisted on a cost-share basis. Whilst 88 stores have been constructed by the end of 2019, we hope to scale this up in 2020 to ensure that every household in a conflict area has developed such stores.



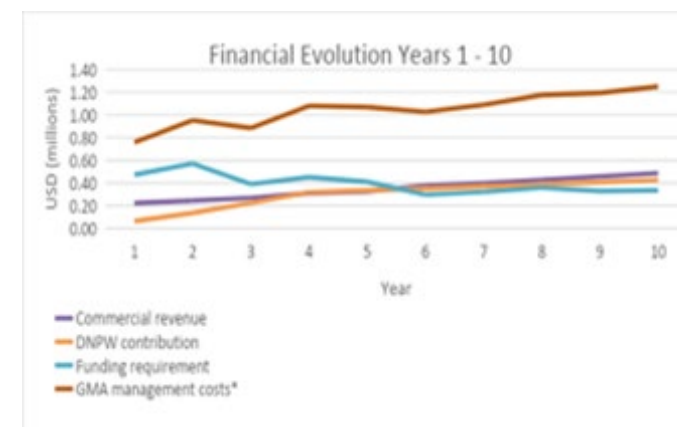
Summary of Human Wildlife Conflict trainings and mitigation measures 2019

CHIEFDOM	CHILLI BLASTER TEAMS	CONSOLIDATED FARM BLOCKS SUPPORTED	ELEPHANT PROOF GRAIN STORES	FARMER TRAINED IN CHILLI GROWING	KG OF CHILLI PRODUCED BY FARMERS
Mukungule	3	3	8	30	200kgs
Nabwalya	4	5	10	50	900kgs
Chikwa	4	4	28	345	121.5kgs
Chifunda	4	4	42	245	171kgs

## Protected Area Planning in the NLE

### GMA and NLNP General Management Plan Development

The programme has also been supporting a range of protected area planning activities for the NLNP and surrounding GMAs over the last three years, through the development of General Management Plans (GMPs) working to support the DNPW planning team technically and financially. The NLNP GMP final draft was ready for approval in mid-2019 but awaits approval by DNPW senior management. Munyamadzi GMA GMP final draft was also ready for sign off and both Nabwalya and Mpumba Chiefs and CRBs agreed benefit-sharing arrangements in the draft mid-year. However, to date, this has also not been signed, even though the new Nabwalya Chief was appointed in October 2019. The verification meeting for Mukungule GMP was held in March 2019, but final maps were only generated in January 2020, thus the final draft now needs completion, approval and signing. A consultative meeting for the Lower Musalangu GMP was held in April 2019, where previously agreed zonation maps, developed through village-level participatory land-use planning, were disputed by the customary leadership and thus a renewed process for the chiefs to sign off chiefdom level zonation was only completed at the end of 2019. Business planning was also instigated for Chikwa, Chifunda and Mukungule CRBs, to examine potential new revenue streams and assess the gap between funds required for conservation management and current and projected revenue. Drafts will be presented to communities in early 2020.



### Business Planning

A business plan for Nabwalya Chiefdom, based on the GMP was developed and business plans for Chifunda, Chikwa and Mukungule were initiated. In Nabwalya, the financial needs to manage the area are estimated at around \$800,000 currently, increasing with capital investment and inflation to around \$1.2 million over 10 years. Whilst commercial revenue is expected to grow from hunting and tourism development interventions (such as photo tourism) envisioned in the business plan, from around \$223,000 to around \$487,000 per annum. It is clear that considerable effort will be required to increase revenue, diversify the sources of revenue (for example through photo tourism) and also to explore other new revenue sources. These might include (a) licence fees to be structured for various natural products harvested from the GMA; (b) carbon finance; (c) applying a conservation levy to agricultural products produced and harvested in the GMA; (d) media and filming fees. However, even if these initiatives pay off, it is likely that philanthropic funding will be vital to bridge the gap.



Imagery by Mana Meadows Photography & FZS



# Developing Conservation Compatible Livelihoods in the GMAs

## CoCoBa: Community Conservation Banking

Microcredit village savings and loans groups called Community Conservation Banks (CoCoBa) have been set up in Mukungule, Chifunda and Chikwa Chiefdoms. The members of these groups agreed to adhere to conservation-compatible activities and contribute at least one share per week when they meet. Funds are kept in savings boxes with a set of 3 padlocks for security. When there are sufficient funds, members can apply for loans for conservation-compatible small businesses, with agreements on how quickly to repay the loans and with a certain level of interest. Loans are generally paid back at the end of the third month.

FZS has continued to expand the groups and by the end of 2019, 25 groups have been formed with 699 members in total (69% women). The original groups are now in their fifth annual cycle.

Evaluation of the CoCoBa approach took place in two ways. First, a microfinance expert was contracted to undertake an assessment of the impact of the strategy from both a socio-economic and conservation perspective and also to provide recommendations on how the programme could be improved, sustainability strengthened and also scaled up. Key recommendations around restructuring support to build group sustainability and independence, are being adopted in a revamped model after retraining FZS staff. This has involved adjusting the following elements:

- Changing incentives and interest payments so that those that can pay back loans early do so
- Training village agents to set up groups

independently and be paid by groups for future mentoring

- Using cheaper equipment and tools such as the savings boxes and ledgers

The majority (77%) of a total of 579 loans were utilized to invest in trading-related businesses. These businesses included groceries, selling food items, selling baskets, buying and selling chickens and raising goats. Baking foodstuff for sale and investment in agriculture (particularly purchase of inputs)

accounted for 7% and 6% of loan usage respectively.

Other businesses invested in e.g. beer brewing, tailoring, carpentry, running hammer mills, and home improvements. Focal group respondents outlined how CoCoBa had introduced a savings culture and also a method to save. Share-outs of savings provided demonstration of the scheme's benefits to non-

members and if these are timed to periods when finance was needed e.g. to buy agricultural inputs, school fees, or other materials, the savings could also have significant knock-on effects.

Second, in early 2019, follow-up household surveys were conducted in 3 villages to assess socio-economic status and attitudes to conservation after 3 years. A total of 588 household from CoCoBa members (322) and non-members (266) were analysed, of which 279 were baseline (47%) and 307 were follow-ups (53%). Respondents were primarily female (392, 67%) ages 26-35 (170, 29%), completed primary level education (363, 62%) and the head of household (359, 61%).





Overall, livelihood streams increased significantly for all respondents from baseline, mean 1.41 to follow-up 1.55 (range 0-4). Membership in CoCoBa groups has a positive impact as the number of current livelihood streams increases from baselines, mean 1.47 and follow up, mean 1.74. Non-members' income streams had a statistically significant drop from 1.33 at baseline to 1.22 at follow-up.

The conservation training element appears to have significant outcomes, as articulated by communities and revealed by more detailed analyses. This element reaches adult members of communities directly and thus can rapidly effect change in knowledge, attitude and practices. Whilst this training element costs more to put in place at CoCoBa group initiation, our conclusion is that it should be a central tenet of any future microfinance models. However, this conservation education training aspect is unlikely to be self-financing in improved and scaled up microfinance models as it takes quite a number of days and maybe relatively low priority of self-financed trainers, thus project/donor support will be required to maintain this element: either project staff or village agents should be trained and paid to deliver this component. Moreover, the CoCoBa groups could be a useful entry point for other measures such as improving reproductive health, building gender equality, training on women's leadership skills, reducing gender-based violence or improving nutrition.

Overall, NLEP believes that CoCoBa schemes have helped challenge communities trapped in the dependency syndrome, with a number of individual success stories. Both community perceptions and more detailed analysis suggest there are positive economic benefits, as well as social empowerment and potentially real behaviour change around conservation initiatives.

## Bee-keeping

As means to diversify livelihoods but in a conservation-compatible manner, and building on the pilot work in Mukungule and Nabwalya in 2018, another 100 individuals were provided with start-up bee-keeping training and equipment in 2019, also extending the scheme to Chikwa and Chifunda. Training was provided on hive construction, honey harvesting and value addition through honey and beeswax processing. Participants were provided with bee-keeping and honey processing equipment such as overalls, veil, gloves & rubber boots, a swarm box, smoker and hives, latterly on a cost-share basis and after demonstration of interest from making traditional hives. Distribution of the hives was not, however, completed by the end of the year. Whilst initial groups had satisfactory bee colonisation rates, considerable mentoring and monitoring was required with some beneficiaries despite some clear economic benefits from honey harvesting.

At the last harvest, average earnings per bee-keeper were \$65 (range \$13-227) and two harvests per year can be obtained. Whilst initial harvest were consumed locally or sold around Mpika, NLEP is now looking at options of developing partnerships to get unprocessed honey into the value chain and more niche marketing. NLEP also plans to change the mentoring and monitoring scheme to encourage some participants to increase their income and improve the timing of harvesting as there is scope to improve both yields and profits for many.



## Women's Leadership and Participation in Natural Resource Management

Recognising that women are poorly represented on both VAG and CRB committees, empowerment of women for a more active role in natural resource management was a focus of training towards the end of the year. 103 women from the 5 target CRBs participated in a 2-3 day training in leadership. Some walked for 3 days to attend. Topics included the values and benefits of natural resource management to women, effective communication, climate change, reproductive health, human rights and dealing with gender-based violence, which is common in the area. Discussion revealed substantial barriers for female participation in many aspects of life. For example, women have high levels of illiteracy particularly in Nabwalya and Lundu, due to poor

school access and early marriages. Generally, they play a secondary role in decision-making in the household through stereotyping and because they take on all the household work, while their contribution to the economy of the household is not recognised. Moreover, traditional law is biased against women and culturally women's intelligence and abilities are not recognised, they are subordinate to their husbands, expected to stay at home and often subjected to domestic violence. All these issues mean that they are not able to attend community meetings, are less likely to be employed by safari operators, are less likely to have access to benefits from natural resources and are also unable or discriminated against for leadership positions. The training was received with considerable enthusiasm and was an eye-opener for the participants as they had never received this kind of orientation information and would like to see a long term programme to support women and youth empowerment in the area, linked with conservation management.



## Borehole Drilling and Horticultural Pilot Plot Development

In collaboration with Agrismart, a local agricultural NGO, the project started a pilot scheme in 2018 when two 2.5-hectare irrigated plots were constructed in Mukungule GMA to both improve livelihoods and nutrition. Interested individuals in the community were trained and facilitated into user groups with equal division of land. The groups then cleared the land and planted up various vegetable types for irrigation. In one area, the group was functioning during the 2019 dry season and harvest of vegetables such as Chinese cabbage, okra, tomatoes, rape, maize, beans, watermelons and cabbage was grown and sold locally. Chilli was also grown and used mostly for human-wildlife conflict mitigation, but it is hoped to develop

market chains as there is high demand nationally and internationally. The other group struggled to be cohesive and despite training and retraining were not producing significant harvests. Thus, we have re-formed the composition of the group under new leadership and hope that improved attitude and productivity may give results. Initial

prospects are good. When tourism increases, we hope these plots will be able to sell produce to tourism camps in NLNP or the GMA.

Another four boreholes were drilled with handpumps in 2 villages in Chikwa in 2019, augmenting the 14 previously constructed. At these sites, one group of 35 women self-organised to cooperate for vegetable growing with hand-watering whilst another 22 individuals are working independently. This will provide a good basis for the potential introduction of more automated irrigation if funds can be obtained.



## Community Involvement in Tourism: Samala Camp in Mukungule GMA

Development of an operator/community partnership model that will bring mutually beneficially economic diversification to both parties, promote conservation, develop skills and job opportunities and bring more economic traffic to the North Luangwa Ecosystem is an important long term objective for the project. FZS worked with the Mukungule CRB to develop a basic self-catering tented camp on the Mwaleshi River near the park entrance gate in the last quarter of the year.

The camp consists of two tents with en-suite bathrooms, a communal sitting area, a dining area, an equipped kitchen and staff quarters. Water is provided, pumped from the river to a header tank and solar power installed to run lighting, recharging and a fridge-freezer. An area for camping was also developed. In order to support this initiative, the CRB

and VAG members were given training in camp management, how to develop and monitor contracts with a private operator to manage the camp and a template was developed that will be used in negotiations with potential private partners. The CRB named the camp Samala and marketing materials were developed for flyers, website use and online listings. Whilst there are plans to develop further similar sites within NLNP and the potential to link with Chifunda Bush Camp, whose CRB is looking for a private operator, the GMPs for both areas need finalising before any operator will commit. FZS, in order to safeguard the investment, proposes to sign a limited term contract with the CRB for 2020 to assist with marketing, camp bookings and also camp management, whilst these long-term options evolve.



## Feasibility of Community Private Partnerships for Wildlife Enterprises in Mpumba Chiefdom

FZS is assisting Chief Mpumba and the Mpumba Natural Resources Trust (MNRT) to resolve a long-standing conflict between the allocation of land by the District Agriculture Office, under the TAZARA corridor scheme, without the approvals of the Chief. The planning of farms did not take into account plots for burial sites, nor the land given by the Chief to the community (MNRT) for conservation purposes. Multiple discussions between the Chief and other Mpumba office holders and the Commissioner of Lands in Lusaka finally led to an agreement that the land titles awarded to private individuals were illegal and letters would be written to the recipients. Whilst this is not yet finalised, good progress has been made and we are hopeful it will be concluded and the MNRT will regain control. In the meantime, a series of community meetings have been held to build VAG capacity and early next year, consultancies will be commissioned to assess the ecological and financial feasibility of a Community-Private Game Ranch Partnership in the area.





Nkamba Bay. Image by Ndole Bay Lodge.

# ZAMBIA NSUMBU TANGANYIKA ECOSYSTEM



## The Nsumbu Tanganyika Conservation Programme

2,020 km<sup>2</sup> | NSUMBU NATIONAL PARK

2017 | PROJECT COMMENCED

7,000 km<sup>2</sup> | TOTAL OPERATIONAL AREA

PROGRAMME LEADER | CRAIG ZYTKOW

A PARTNERSHIP BETWEEN  
Department of National Parks and Wildlife Zambia  
& Frankfurt Zoological Society





# TO PROMOTE AND PRESERVE THE BIODIVERSITY OF THE NSUMBU ECOSYSTEM & LAKE TANGANYIKA FOR THE SUSTAINABLE BENEFIT OF ITS INHABITANTS

## History and Background

In 2017, Frankfurt Zoological Society Zambia (FZS) established the Nsumbu Tanganyika Conservation Programme (NTCP) to accelerate efforts undertaken by a small local NGO (Conservation Lake Tanganyika) since 2012, dedicated to preserving the Nsumbu-Mweru Ecosystem (NME) with a focus on Nsumbu National Park and surrounds. To facilitate and guide the co-management of the NME, FZS has signed a formal Memorandum of Agreement with the Government of Zambia for a period of 10 years. The area covered by this agreement stretches from the south-western corner of Lake Tanganyika to the eastern shores of Lake Mweru, covering an area of approximately 10,000 km<sup>2</sup>. This ecosystem of three national parks (Nsumbu NP, Mweru-Wantipa NP and Lusenga Plains NP) and two Game Management Areas (Tondwa GMA and Kaputa GMA) is characterised by extensive wetlands and endangered Sumbu-Itigi forests - an assemblage of Combretum species thicket complex found only in northern Zambia and western Tanzania.

In the 20th century, this area supported sizeable elephant and black rhino populations that moved freely throughout the region. However, widespread legal hunting and poaching during the 1970s and 80s exterminated black rhino from the area and reduced

its elephant population drastically. This development was fuelled by regional geopolitical conflicts in the Democratic Republic of the Congo (DRC) and Burundi, which provided a surplus of illegal weapons, safe retreats for poachers and active illegal wildlife trade routes.

Today, Nsumbu NP holds the last remnants of this much wider and genetically distinct elephant population anywhere along the shores of Lake Tanganyika. The floristically unique Itigi forests have likely contributed positively to the survival of this elephant population by providing them with pockets of dense cover. Interestingly, this relationship goes both ways and the animals are a critical key stone species to maintaining the endangered Sumbu Itigi habitat.

Existing relationships, experience and influence of the highly successful North Luangwa Conservation Programme provided immediate leverage for setting up of NTCP. Through the support of key stakeholders and donors, the NTCP was able to implement a rapid enhancement of all aspects of protected area management in the NME since 2017. This increased security not only benefits the landscape's elephant population but also many other large mammal species, the threatened Itigi forests and the aquatic





## LAW ENFORCEMENT & RESOURCE PROTECTION

### Terrestrial anti-poaching efforts

Elephants within the NME are a flagship species and receive priority protection and consequently priority allocation of resources. Whilst the population is showing signs of recovery in response to increased law enforcement efforts in the recent past, the threats faced by this population remain high. Automatic weapons, ammunition and hardened poachers from DRC still pose a significant, if reduced, threat. However, a proliferation of home-made shotguns and sporting rifles in communities surrounding the protected areas are a more sustained and widespread poaching method. Illegal entries from Zambian communities along the eastern boundary of Nsumbu NP and from the waters of Lake Tanganyika have surpassed international threats from DRC as a primary threat to elephants and other wildlife in recent times. The use of wire snares remains one of the biggest challenges; due to their indiscriminate nature and long-term persistence in dense vegetation they remain a threat long after poachers have fled or been apprehended.

The NTCP therefore provides comprehensive anti-poaching and protected area management to combat continued high levels of poaching throughout the ecosystem. This focusses on a “boots on the ground” approach and the support needed through the provision of equipment, rations, fuel, salaries and leadership. A law enforcement strategy guides more than 100 well-trained rangers to secure the National Park and support operations in the wider NME. 2019 saw comprehensive progress towards this goal with 40 new rangers recruited, trained and equipped to join a pre-existing force of 40 effective field officers bringing the current NTCP supported anti-poaching force up to a total complement of 15 Wildlife Police Officers and 65 Community Scouts, who work out of three base camps. The NTCP manages and supports this force to conduct day, short and long anti-poaching patrols to secure the ecosystem. All patrol activities are coordinated through a central control room which is manned 24/7 and informed through three

Investigations and Intelligence Unit (IIU). By late 2019, 15 fully equipped, trained, and motivated patrol groups were operating throughout the ecosystem following a comprehensive patrol deployment schedule, which was developed to provide maximum law enforcement impact whilst retaining sufficient adaptability to tackle any emerging threat. This refreshed ranger force represents the best trained and equipped force NME has ever had.

Overall, elephant poaching has seen a sharp decrease since implementation of these measures, with no detected elephants poached since August 2018. In addition to already existing structures, the NTCP is also in the process of setting up its own canine unit to further increase its effectiveness in combating illegal poaching activities in 2020 and therefore decrease the threat to the area’s wildlife populations.



Monitoring of ranger patrols .  
Opposite: Confiscations of illegal equipment. Imagery by FZS



## Nsumbu De-Snaring Team















Snares are suspected to have been a major contributing factor in the decline of lions and other carnivores in the NME as well as being an effective bush meat poaching method. Whilst anti-poaching patrols provide a deterrent to all poaching, snaring can be hard to detect and when abandoned by poachers the snares left behind remain deadly. In 2019, the NTCP created a dedicated de-snaring team tasked with strategically sweeping snaring hotspots to remove old snares, and where necessary provide support to patrol teams to ensure any new snares detected were removed. By the end of the 2019, 10km<sup>2</sup> of dense Itigi forest had been thoroughly de-snared and the de-snaring teams had removed 438 snares.

## TABU: The Tanganyika Boat Unit

The Tanganyika Boat Unit (TABU) became fully operational and integrated in the wider resource protection strategy during 2019, complementing the highly effective terrestrial anti-poaching efforts. As part of the law enforcement enhancement, a 14-day boat operators course was conducted to develop the necessary skills and competencies to ensure TABU can operate safely, effectively and efficiently. The TABU is well-equipped with two dedicated boats and other specialised equipment and operates under the mandate of the DNPW to strengthen law enforcement against illegal wildlife trade across southern Lake Tanganyika and to reduce illegal activities in and around the waters of Nsumbu NP. As a tactical law enforcement unit, the TABU can effectively police the waters of the Nsumbu National Park, provide and react to intelligence, and target-specific high-level threats. As soon as operational, TABU gained immediate results against illegal commercial fishing for local and international trade and has increased the deterrence of lake-based poaching incidents targeting protected mammals such as hippo.



## IMPACT 2019

		0 poached NME
		111 firearms confiscated 105 rounds of illegal ammunition
		117 arrests
		224 foot patrols conducted
		31 arrests 22 firearms 11 rounds of ammunition 124 snares
		52 boat patrols conducted 80 illegal boats confiscated 171 illegal fishing nets confiscated 234 tiller lamps confiscated
		10km <sup>2</sup> intensively de-snared 979 snares removed by patrols 438 snares removed by de-snaring team



## Reintroduction and Ecological Monitoring Programme

To support the full ecological recovery of the area, the NTCP embarked on a translocation and reintroduction programme with a first milestone of translocating key prey species as a prelude to re-introducing lions to the ecosystem. Lions were present in the area until very recently and fulfilled an important ecological function in this ecosystem as its natural apex predator. Their reintroduction will therefore promote ecosystem health, re-establish a former range of this globally threatened species and bolster the economic tourism potential of the area. As a first step, the NTCP conducted veterinary checks on the present buffalo population to ensure planned buffalo translocations do not introduce non-existing diseases to Nsumbu, and initiated a comprehensive ecological monitoring programme to fully understand current wildlife populations and behaviours. Satellite tracking collars were fitted on 5 elephants and 3 buffalo to monitor seasonal movements and provide targeted law enforcement. All collared animals were monitored remotely daily, with visual spot checks provided from the air using the NLCP's Aviat Husky with around 20 hours flown in Nsumbu in 2019.

Late 2019 saw the design of a camera trapping project which will see 50 motion triggered camera traps deployed in random 25km<sup>2</sup> grids across the protected area to determine species composition, occupancy and densities of the Park's carnivore populations in 2020. The initial test grid deployed in late 2019 detected 24 mammal species. These mostly carnivore-focussed camera surveys are complemented by distance sampling surveys which will allow a density calculation of herbivore populations, with the aim to conduct early and late season surveys that are easily replicable across a wider area through time. Four transect surveys done as part of training and skill maintenance in readiness for 2020 sighted 455 animals from seven species. These activities will provide insight to existing wildlife populations and measure expected positive changes in key species as law enforcement efforts pay off.



Right: Ranger training and CRB elections. Elephant and buffalo collaring programme. Imagery by FZS.



## Capacity Building and Training

A shortage of well-trained and equipped rangers has been a major limiting factor in increasing the number of effective patrols needed to provide adequate security. The low capacity of government to boost Wildlife Police Officers (WPO) numbers led FZS Zambia to support the recruitment and employment of rangers through the Community Resource Boards (CRB) as Community Scouts. This route provides much needed career opportunities to the youth living near protected areas and strengthens the sense of ownership by communities of the wildlife resource and the effort to protect it.

In 2019, the NTCP implemented a comprehensive law enforcement manpower overhaul based on a strategic plan developed in 2018. This began with the recruitment, training, and employment of 40 additional Community Scouts. A transparent but tough selection process ensured only the fittest and most determined recruits successfully completed a three-month intensive Basic Field Ranger training course and subsequent graduation as Community Scouts. Following this recruitment cycle, the NTCP undertook a comprehensive in-service training programme to uplift the skills of the existing rangers in the project area. All existing rangers underwent 21-day refresher training and the most proficient were selected for park and patrol leadership training and finally, the specialised boat training, to develop the Tanganyika Boat Unit (TABU).

The Nsama CRB is the elected community representation mandated to co-manage the wildlife resource with government. The NTCP recognises this crucial role and the needs to develop the capacity of the CRB for the immediate need of the ecosystem, but also for the future anticipated role of communities to increasingly manage and be responsible for sustainable natural resource use. In 2019, the NTCP targeted improvements in financial and human resource management of the Nsama CRB through providing the resources to conduct regular financial checks on all accounts, and support the development of a human resource manual for the employment of Community Scouts and other potential staff under the CRB.





## Maintenance of infrastructure and Equipment

Increasing project activities implemented in 2019 required a corresponding increase in maintenance support. A fully functioning workshop situated at the Park Headquarters is manned by FZS employed mechanics and equipment providing fuel, service, repairs and oversight to a fleet of 10 vehicles as well as motorbikes, a tractor, a grader and two patrol boats, all expected to continue increasing in number during 2020. In partnership with DNPW, an additional 150km of law enforcement roads were opened in the interior of the protected area providing vital access to remote areas of the park for patrol deployments and general management activities. This is the first step in providing year-round access internally between the east and west of the project area. The increased number of rangers also put pressure on existing housing, over 15 existing DNPW and CRB houses were renovated and 2 boreholes sunk to accommodate the new rangers in three camps.

## Cross-sector Coordination & Public Engagement

The NTCP is an official partnership project between FZS and the Zambian Government through the DNPW. On a day-to-day basis there is a strong integration between personnel in both organisations especially with regards to providing logistics and

planning for all aspects of operations. Weekly project meetings are jointly attended by FZS and DNPW managers ensuring smooth execution of all operations and support. Monthly and quarterly meetings bring together senior managers to review operations and plan for the upcoming activities. A close working relationship between the Project Leader and Senior Park Ranger in Nsumbu ensures that all aspects of park management are discussed regularly with joint decision making. The DNPW Area Wildlife Warden is the most senior ranked government officer in the management unit and as per the Memorandum of Agreement, the DNPW Area Warden and the NTCP Project Leader report to the project steering committee jointly twice per year.

The Nsama CRB is mandated to co-manage natural resources with government and private partners. 2019 saw the NTCP support the Nsama CRB to independently negotiate a 10-year safari lease agreement for Tondwa GMA with a private operator to ensure income generation from the wildlife resource. As part of the Community Scouts' recruitment and law enforcement overhaul, the NTCP supported the voluntary retirement of aged Community Scouts with full benefits allowing for a stronger, younger force to be recruited. By the end of the 2019, the NTCP and CRB jointly employed 65 Community Scouts under the Nsama CRB.

The challenges faced by the NTCP, DNPW and the CRB in the Nsumbu Tanganyika Ecosystem are being successfully addressed through an integrated approach between the three organisations and this will continue.



Above: Ranger housing development.  
Below left: Workshop infrastructure. Below right: New secure armoury.



Community scout recruits. Imagery by FZS





*Kicking for Conservation. A community initiative between local communities to raise awareness for conservation through sports. Imagery by FZS*



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