ANNUAL REPORT 2019



FRANKFURT ZOOLOGICAL SOCIETY



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Mwenezi River and Samalema Gorge in Gonarezhou National Park, Zimbabwe



DEAR READERS AND FRIENDS OF FZS



For Frankfurt Zoological Society, 2019 was an exceptionally good year. And it was all down to our teams and our partners. Our patrons, our members, private donors and sponsors played a major role, too – and I would like to say a big thank you to you all. The trust you place in us, is what carries us and our work forward.

Last year, our income from inheritances and bequests almost doubled compared to the previous year. They are now at nearly the same level as the funding grants. Gratifyingly, the volume of donations has also increased – by an impressive 37 percent. The number of sponsorships has risen, too. These are all encouraging signs. They mean that we can continue our projects aimed at protecting wilderness areas and biodiversity with full force.

But the corona crisis has also provided us with a powerful reminder of the threats we face and the importance of healthy ecosystems. The national parks and protected areas in many countries where we have been active for decades have been doubly hit by the crisis. The health risk has increased for the local people, but many national park authorities have also lost their funding. The risk of poaching, uncontrolled deforestation or illegal gold mining has risen dramatically, too. Our partners in these areas are now doubly dependent on our support.

FZS has initiated a *COVID-19 Impact Study*. Together with other organizations, we want to carry out research aimed at obtaining as accurate a picture as possible of how the pandemic is affecting the management of protected areas. The results will help put our support for the protected areas on an even more sustainable footing. Preserving these areas is our daily work and our overriding mission.

/lans /1/

Klaus Becker President of the Frankfurt Zoological Society

The FZS team travelling on the Rupununi River in the Kanuku Mountains, Guyana.

PROTECTED AREAS – OUR GLOBAL LIFELINE

By Dr. Christof Schenck

It is harder to ensure the protection of national parks in times of crisis. But it is now more important than ever to lay the foundations for a future after corona.

For the first time in recent history, a pandemic of epic proportions has gripped the entire world. Researchers have been warning about this for years – with their predicted scenarios reflecting what is happening today with alarming accuracy. We have opened Pandora's box. Pandemics are on the rise: HIV, Ebola, Zika, SARS and others show that we are approaching a dangerous tipping point – or indeed have already passed it, and that dramatic developments will soon be unfolding which we can neither predict nor control.

In fact, most zoonoses (diseases that come from animals) originate in the tropics where there is a particularly rich array of species. Studies have long shown that the clearing of tropical forests and the encroachment of roads and settlements into these extremely species-rich systems pose a great danger for humankind. If people are increasingly close to wildlife, and if animals are also caught or killed, there is an enormous rise in risk of infections. At the same time, the destabilization of ecosystems leads to a shift in the composition of vector species, such as vertebrates and insect species, but also of the viruses and bacteria themselves.

WITHOUT CONTROLS, POACHERS HAVE FREE REIN

Millions of people have lost their jobs in the main centers of biodiversity, especially in the Global South. In Tanzania, for example, tourism, a systemically important industry, has collapsed virtually overnight. More than one million people worked in the travel industry. COVID-19 and the loss of tourism have decimated the annual budget of the Tanzania National Park Authority (TANAPA) within a very short amount of time.

National parks that depend on tourism income are particularly affected and we are seeing the rise of adverse and intensifying processes. Revenues have dropped to zero, and soon the administrations will not have enough funds to cover even emergency operations. Controls in the protected areas will be greatly reduced. At the same time, more people are moving back to the countryside because they can no longer find work in the cities. This is raising the population pressure in and around the protected areas. Furthermore, the absence of tourists means that large areas are no longer subject to rigorous public scrutiny. There will most likely be an increase in poaching.

Acceptance may also be declining in the communities bordering the parks. Instead of being a source of income, the protected areas now simply represent places where grazing livestock, gathering firewood and hunting are restricted. They are no longer regarded as a long-term resource from which the grandchildren may one day be able to benefit. People are now only interested in how they can fill their cooking pot for the next day.



OPENING THE FLOOD GATES OF THE PROTECTED AREAS WOULD BE DISASTROUS

This does not make the moral argument for conservation any easier. When simply putting food on the table becomes an issue, how strictly should laws be interpreted and how can compliance be ensured? One thing is certain: opening the flood gates of the protected areas would be a grave error. This might seem like offering short-term relief but it would deprive people of their long-term future. Already there are dwind-ling sources of drinking water in the rain-poor eastern Serengeti. And those which still exist have to quench the thirst of more and more people. Towards the end of the dry season, villagers in some areas have to undertake a three-hour walk to collect water. Forest, the most valuable form of natural water storage, is cleared for firewood and timber, for arable and pasture land. If deforestation is not halted, the people who live there will have no chance of survival.

Looting in supermarkets or hospitals is never tolerated, even in times of crisis. The same should apply to protected areas. They belong to the general public and not to individuals, and they provide a true public service for all. This is especially true in the case of the majestic landscapes and animal-rich national parks of East Africa. The Serengeti is to Tanzania as the Acropolis is to Greece, or the Eiffel Tower is to Paris, or the pyramids are to Egypt.

THE SERENGETIS OF THIS WORLD SHALL NOT DIE

Like Tanzania, the national park authority in Zimbabwe has been shaken by the loss of tourism. Life was by no means easy in this crisis-torn country, even before the corona virus: now the situation is catastrophic. Frankfurt Zoological Society and the Zimbabwean National Park Authority have assumed responsibility for conser-

vation and management of Gonarezhou. It is already becoming clear that there will be a one million euro drop in revenue in 2020. Half of this is due to cuts in grants from private donors and foundations which are paying out less as the result of declining investment income and high losses on shares, while the other half is due to the absence of tourists. How are we to maintain surveillance and support the local communities if there is not enough money for either one or the other – and certainly not for both?

The state budgets for the protected areas in countries like Zambia and Ukraine have always been pitifully small and tourism has not provided any significant additional income. The low levels mean that the crisis there is not yet having a major visible impact, especially given that the 2020 state budgets are still in force and that payments have not yet been significantly reduced. However, keeping funding levels so low is not an effective panacea for times of crisis. These parks, too, are likely to experience declining revenues in the medium term as governments increasingly run out of money and massive levels of funding are required for the health sector and social security. A further desperate COVID-19 situation is emerging in South America. For years, illegal gold miners have been among the most dangerous destroyers of the rainforest environment. They extract gold from the river sediment with the help of mercury. What is left behind is a contaminated lunar landscape of apocalyptic dimensions. A new and dangerous situation is making matters worse: controls have been reduced as a result of the lockdown, and in Guyana the rangers have even been ordered to stay at home. The cost of diesel for the prospectors' pumps and boat engines has dropped to a low level, while the gold price is heading for new highs as stock markets collapse.

Dangerous amounts of the nerve and cell toxin mercury are being found in the blood of local inhabitants in the gold mining areas. And now the situation has just worsened with the arrival of SARS-CoV-2. The prospectors penetrate deep into the rainforests where they can carry the dangerous virus to the last indigenous peoples.

THE EARTH IS RUNNING A FEVER

While the world's attention is gripped by the COVID-19 pandemic, the other two major crises, loss of biodiversity and climate change, are fading into the background. But Amazonia is not the only place where both crises are ongoing – and with dramatic consequences for the future. One million animal and plant species are threatened with extinction. Seventy-eight percent of primary forest has been destroyed. More than four million hectares of forest are being lost each year. Twenty to thirty percent of the global CO₂ emissions, which are the main cause of climate change, come from the destruction of forest. The average global temperature has risen by one degree since the beginning of industrialization. There is more CO₂ in the atmosphere than there has been for 800,000 years. The Earth is running a fever right now. The "lungs of the Earth" are short of breath. The worst-case scenario of multiple organ failure is looming large.



Never before have we experienced such global dislocation as we are seeing right now. Yet it is also creating a unique opportunity. The challenge is to tackle all three crises – climate, biodiversity and pandemics – together. Protected areas are a crucial element in this. They store carbon and stabilize the climate, they reduce species loss, and they lower the chance of dangerous infectious diseases being transmitted. Protected areas are our global lifeline.

At present they account for 15 percent of the land area. This is much too little, as a broad front of scientists now believes. The EU Convention on Biological Diversity requires 30 percent, with one third of this needing strict protection. The German National Academy of Sciences Leopoldina even calls for 50 percent. Strategic selection and size are particularly important aspects. Token protected areas, i.e. regions that are basically unattractive for any other use, are no longer tenable. What is crucial now is to protect the centers of biological diversity. Forests, savannahs and wetlands are of particular importance - and the larger, the better. Only expansive areas can sustain large migratory herds, allow for ecological processes to function properly, and protect full inventories of species. And, it is only in such areas that it is then possible to maintain genetically healthy populations of species which require large habitats, such as tigers or elephants. The fringes of large areas suffer less from human influence: they are more crisis-resistant.

But protected areas should not only exist on paper, but also in reality. Most of the major national parks in the tropics are completely underequipped and chronically underfinanced. Only 4.7 percent of annual nature conservation expenditure goes to the protected areas in the Global South. Leopoldina scientists are now calling for four billion euros per year for the funds-starved protected areas in Africa alone. This money should come from the EU, they argue, which has a particularly large ecological footprint. Consumption levels in the EU are more than double what the land area actually permits. Seen in this light, the payments are simply a compensatory measure.

Gold miners inflicting large wounds on the rainforest and contaminating rivers with mercury (here in Guyana).



Protected areas like the Serengeti must be protected forever and should not be subject to varying annual budgets.

WE NEED THE LEGACY LANDSCAPES FUND

It is self-evident that the funding of protected areas like the Serengeti, which are supposed to last forever, should not be based on fluctuating annual budgets or project funding. There are plenty of examples of centuries-old foundations in Germany which show how endowment funding can work. There is a stock of capital or real estate that generates income on a permanent basis. In times of low interest rates, a diminishing portion - a so-called "sinking" fund - can be added. However, it is crucial that the base stock is not depleted, because only then, can ongoing funding be guaranteed. Studies and budget comparisons show that a level of one million euros per year would provide solid basic financing for most protected areas. To achieve this, the Legacy Landscapes Fund must hold capital stock of approximately 30 million euros per area. This would then generate one million euros annually, which is paid out on a success-oriented basis for a specific national park to a consortium consisting of an NGO and a national protected area authority. The Legacy Landscapes Fund can then gradually increase. Nine hundred million euros, the amount that has been earmarked for the construction of the new theatre and opera house in Frankfurt, for example, would be sufficient to provide permanent funding for 30 protected areas.

KfW Development Bank and the German Federal Ministry for Economic Cooperation and Development (BMZ) are currently in the process of developing the Legacy Landscapes Fund together with IUCN, UNESCO, FZS, WWF, African Parks, Campaign for Nature, the Wildlife Conservation Society, and other NGOs. Private donors such as the Wyss Foundation, Walton Foundation and Moore Foundation from the USA are particularly important in this respect. Private donors and companies from Germany have yet to sign up. Such a commitment is now doubly

necessary – not only to secure their own future, but above all, to demonstrate a due sense of responsibility.

When Notre Dame went up in flames last year, it showed how we are able to preserve buildings over a time span of more than 700 years – but also how moved we are when they are damaged. Almost one billion euros of donations were pledged in just a few days. It is now the cathedrals of nature which are on fire. Poaching, gold mining and deforestation are threatening nature's treasure troves as never before. Two things are now needed: an emergency "fire-fighting" response in the protected areas, but also long-term protection.

In Greek mythology, when Pandora's box was opened, evil escaped and spread throughout the world. The box also contained hope, but it was not able to escape before the box was closed again. Now, amidst one of the greatest challenges, it is time to let it out. The United Nations motto for World Biodiversity Day was "Our solutions are in nature." In its preservation, not its destruction. That is our hope and our guiding principle.

PRESENTING FRANKFURT ZOOLOGICAL SOCIETY

Zoologische Gesellschaft Frankfurt von 1858 e.V. (Frankfurt Zoological Society, FZS) is a registered non-profit-making society based in Frankfurt am Main, Germany. The origins of the Society are to be found in the work of Professor Bernhard Grzimek who first set up FZS as a support society for the Zoo, although he then gradually developed the Society into a nature conservation organization. From the outset it has been based at the zoo in Frankfurt.

As it promotes nature conservation and animal welfare, Frankfurt Zoological Society enjoys corporate tax exemption on the basis of the notice of exemption and the annex to the notice of exemption of the Frankfurt am Main V Tax Office, tax no. 47 250 98191, of 18 September 2019 according to § 5 para 1 no. 9 of the Corporation Tax Law. Its official organs are the General Assembly and the Board of Directors.

The **General Assembly** convenes once a year. It elects the Board and approves its activities, approves the annual financial statements and elects the auditor. In 2019, the Society had 3,523 members, consisting of private individuals and institutions.

According to its statutes, the **Board** consists of up to eight individuals who work on a voluntary basis. It is elected for three years and adopts the annual program of projects and the annual budget as put forward by the Executive Director. No conference or attendance fees are paid to the members of the Board of Directors. The Board may appoint an executive director for operational management. The biologist Dr. Christof Schenck has conducted the Society's business since the year 2000.

In 2019, Frankfurt Zoological Society employed a total of 440 staff members, 27 of whom were based at the headquarters in Frankfurt.

There were also 24 volunteers working as conservation ambassadors at Frankfurt Zoo, where they explain FZS's conservation projects to zoo visitors. The Conservation Ambassador Project has been handed over to Frankfurt Zoo in January 2019. FZS continues to financially support the cooperation project. In addition, there was one volunteer assistant working at the Frankfurt headquarters.

THE FZS NETWORK

FZS is supported by its **Hilfe für die bedrohte Tierwelt** Foundation. This is a legally independent foundation under private law with charitable status.

FZS has been supported in the United States of America since 2008 by the independent non-profit organization **Frankfurt Zoological Society US (FZS-US).** This "501(c) (3)" organization is also exempt from tax, and the donations from private and institutional American donors in support of the FZS project work are eligible for tax relief. FZS-US is run by a Board. This consists of seven volunteer members. Its President is the FZS Executive Director Dr. Christof Schenck. Since 2012, the organization has been run by Executive Director Dr. Peyton West, who is also a member of the Board.

Frankfurt Zoological Society is represented in Peru by the nonprofit association Ayuda para vida Silvestre Amenazada – Sociedad Zoológica de Francfort Perú (AVISA SZF Peru), in Colombia by Sociedad Zoológica de Frankfurt, and in Zambia by Frankfurt Zoological Society Zambia Ltd. It is also registered as a national or international nonprofit organization in other countries such as Ethiopia, Tanzania, DR Congo, Zimbabwe, Vietnam, Indoesia and Guyana.

HONORARY BOARD OF FZS

Klaus Becker *(President)* Prof. Dr. Manfred Niekisch *(Vice President)* Dr. Thomas Kantenwein *(Vice President)* Prof. Dr. Katrin Böhning-Gaese* Gerold Dieke Dr. Norbert Kloppenburg* Egon Kochanke Renate von Metzler** Prof. Dr. Dr. h. c. Volker Mosbrugger** Hans Joachim Suchan

* since 16.09.2019 ** until 16.09.2019

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*since 11.12.2019 ** until 11.12.2019

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Dr. Christof Schenck *(President)* Prof. Dr. Andy Dobson *(Vice President)* Dr. Peyton West *(Treasurer and Executive Director)* Matt Arnold Curtis Ravenel Jason Scott Heather Zichal

OUR YEAR 2019 IN NUMBERS

6,557 Sponsors supported FZS in 2019

440 Staff Members

worldwide, of which 27 are based at headquarters in Frankfurt (Germany) **18.5 Million Euros** invested in our conservation projects in 2019

29 Projects & Programs in 18 countries

2.4 Million Euros from donors, members and sponsors

12.6 Million Euros from institutional and public third-party donors

1.8 Million Euros

provided by the "Hilfe für die bedrohte Tierwelt" Foundation

Delacour's langurs in Vietnam

PROJECTS & PROGRAMS 2019

Conservation projects and programs managed by FZS itself and projects operated by other organizations, that were supported by FZS.



FZS AFRICA PROGRAM

TANZANIA

- 🍼 Serengeti National Park
- 🤣 Serengeti Ecosystem Management Project (SEMA)
- Mahale Ecosytem Project
- 🤣 Selous Conservation Project

ZAMBIA

North Luangwa Conservation Program
 Nsumbu-Tanganyika Conservation Program

ZIMBABWE

🍼 Gonarezhou Conservation Program

ETHIOPIA

🤣 Bale Mountains Conservation Project

DEMOCRATIC REPUBLIC OF CONGO

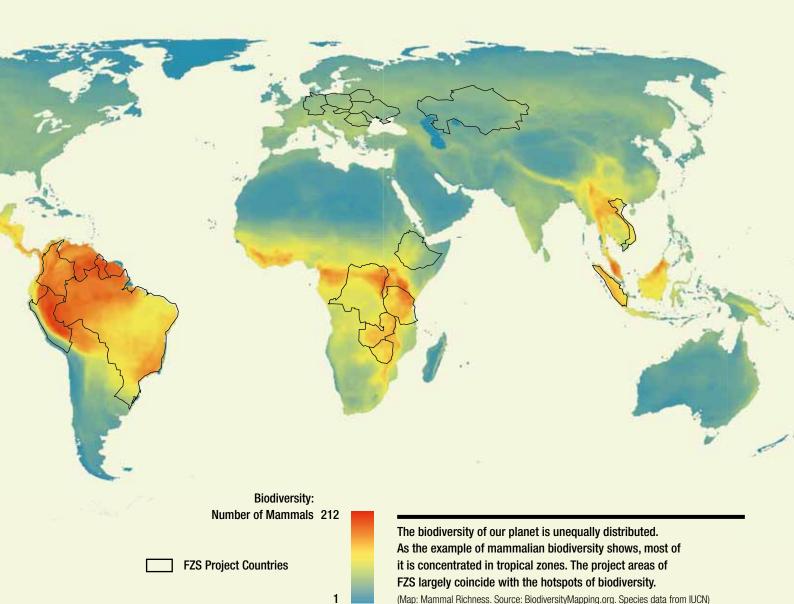
Virunga Conservation Project
 Lomami Conservation Project

FZS EUROPE PROGRAM

GERMANY

	Wilderness in Germany		
-	Brandenburg Wilderness Foundation		
-	Hohe Schrecke Beech Forest Conservation Project		
-	Günztal Riverbed Restoration – Bavaria		
	Conservation Ambassadors at Frankfurt Zoo		
TRANSBOUNDARY PROJECTS			
V	Cross-border Protection of old-growth forests in the Eastern Carpathians (Poland, Slovakia and Ukraine)		
	Wilderness in Europe – Casework for securing important		
	European Wilderness Areas		
BEI	LARUS		
V	Preservation of the Bialowiesza-/Bielaviežskaja Pušča primeval forest		
	Wilderness without borders – new protected areas in Polesia		
UKRAINE			
Ø	Protecting virgin forest in the Ukrainian Carpathians		
ROMANIA			
Ø	Establishment of a wilderness/forest reserve in Romania		
KA	KAZAKHSTAN		

Protecting the steppes and the saiga antelope in Kazakhstan



FZS SOUTH AMERICA PROGRAM

	-
PERU	INDONESIA
 Andes to Amazon Conservation Program Protection of the Yaguas National Park GUYANA 	Sukit Tigapuluh Landscape Conservation Program
🤣 Management of the Kanuku Mountains Protected Area	Forest Protection in the Higlands of Central Vietnam
COLOMBIA	_
Protection of the Chiribiquete National Park and its Surroundings	
BRAZIL	
Protection and Management of Cantão State Park	-

(Map: Mammal Richness. Source: BiodiversityMapping.org. Species data from IUCN)

FZS SOUTHEAST ASIA PROGRAM

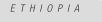
BALE MOUNTAINS

A NATIONAL PARK AT A CROSSROADS

The Bale Mountains National Park in the southern highlands of Ethiopia is home to rare and endemic species – and increasing numbers of people. Unless decisive changes are made, the chances of protecting the mountains on a permanent basis will be slim.

Sanetti Plateau in the Bale Mountains

13



Bale Mountains National Park

"To me, Bale looks like an island rising up from the sea," says John Guernier, FZS Project Manager of the Bale Mountains Conservation Project, describing his workplace, the Bale Mountains National Park in Ethiopia.

"Bale is a magical place. It's a wild and dramatic landscape, and is home to many endemic species. Ethiopian wolves, the rarest canids on earth, still live here, as do black maned lions, the only lions that live in moist montane forests, and even melanistic leopards. There is a breathtaking variety of birds of prey," enthuses John. Hearing him tell his story, one can almost see the rugged Afro-Alpine highlands, which at first glance seem so barren and yet are teeming with life.

But the 2,200 square-kilometer national park in the Ethiopian highlands is under enormous pressure. And the window of opportunity for preserving this important landscape is rapidly closing. FZS has been working in Bale since 2004 to conserve the park's special habitats and the entire ecosystem. It supports the management of the reserve by building capacity, facilitating research and monitoring, and by providing and maintaining equipment. In 2019, for example, it purchased two all-terrain vehicles, a tractor with trailer, and ten horses. It also repaired a number of checkpoints.

Although we have recently made progress in some areas (permanent designation as a national park in 2014 and signing of a new *General Management Plan* in 2017), FZS and its partners have not yet been able to make any clear headway in combating the main threats: massive overgrazing, clearing forests for agriculture and illegal settlements within the park boundaries.

TRADITIONS NEW AND OLD

In the past, the communities in and around the park used the Bale Mountains to graze their livestock, mainly during the dry season. But now there are many more people – owning much more livestock which gra zes all year round in the park. This massive over-exploitation of the natural resources – the many goats, donkeys, sheep, horses and cattle that graze across the entire park – is causing severe damage to the Afro-Alpine and Harenna Forest ecosystems. Last year, FZS commissioned a study to better understand grazing dynamics so as to inform a strategy to resolve the problem. FZS staff also

marked and registered over 35,000 head of cattle to gain an overview of the scale of overuse. This will help them to understand who is driving how many animals to the park for grazing. The results are being used to develop a community-based grazing regime with appropriate control mechanisms. Agreements on temporary grazing rights are being drawn up with the municipalities bordering the park.

The population of Ethiopia has grown from 65.5 million in 2010 to 112.2 million today. As a result, almost the entire buffer zone – the land immediately adjacent to the national park which used to be pasture land for livestock – has been converted into arable land for growing crops. Today, there are millions of people and their livestock living on the fringe of the park, and several thousand people living illegally in the park itself. The sensitive ecosystem has become pasture land for livestock.

The 2017 *General Management Plan* – signed by the communities around the perimeter of the park, the regional governments, the *Ethiopian Wildlife Conservation Authority* (EWCA), the *Ethiopian Wolf Conservation Programme* (EWCP) and FZS – defines concrete measures for protecting the Bale Mountains and counteracting overuse. One such measure is the voluntary relocation of people currently living within the national park. John Guernier explains what this means: "All settlements and households established after the park became legal in 2009 are being removed. While those that were there pre-2009 will be encouraged to resettle to land outside of the national park. We want these communities to have a better life after they move. And that the park gets a much needed rest. This is our long-term strategy."

THE PARK HAS A DIFFICULT TASK AHEAD OF IT

In 2020, the FZS team will continue its intensive dialog with municipalities and decision-makers. After all, settlements can only be relocated under optimal conditions, with strong political backing and support from all relevant parties. "It's a very sensitive issue which requires a great deal of effort. But we want to do it better than anyone else before," says John. "We have to ensure that the lives of these people improve from living outside the park boundaries. At the moment their situation is precarious, but this will give them land and property rights for the first time." And the relocation is by no means the end of the story. The communities will continue to receive support in the following years. There are plans to set up agricultural programs and microcredit groups, and to build schools and health centers.



A key precondition for such a program is better cooperation with the municipalities. The *Experience sharing visits* conducted in 2019 were a part of this. Sixty representatives of the villages and districts on the edge of the park visited the Simien Mountains National Park in northern Ethiopia and the Sankelle Sanctuary. There they were able to compare notes with community members and staff from the protected area authorities and gain an impression of how conflicts over the park's natural resources can be resolved. Those who took part in the *Experience sharing visits* have become staunch advocates of the Bale Mountains National Park and new allies in park protection. The consequences, however, would be dire not only for nature conservation, but above all for the many millions of people in Ethiopia's lowlands and in Somalia whose livelihoods depend on the Bale Mountains ecosystem remaining intact. It provides them with precious water.

DOMESTIC DOGS A DANGER TO ETHIOPIAN WOLVES

Livestock grazing in the park also poses an indirect threat to the Ethiopian wolves. This is because they are susceptible to infectious diseases such as distemper and rabies which are transmitted by the herdsmen's dogs. They bring dogs into the national park to protect their livestock from predators. This is a tradition which stretches back over millennia, but one with fatal consequences: 70 percent of the Ethiopian wolves in Bale died of rabies or distemper last year. The first dog control mission was launched in December 2019; an important step towards reducing the spread of the rabies and distemper viruses.

Unlike many parks in other African countries, poaching is not a threat to the wildlife in the Bale Mountains. Most of the population are very religious and live according to strict dietary rules. Bushmeat is taboo and the animals are generally not hunted. The endemic mountain nyalas also benefit from this: their population remained stable in 2019, as was confirmed by ecological monitoring.

"2020 will be a decisive year for FZS in Bale," says John Guernier. He is all too aware that the Bale Mountains National Park can only be preserved if there is strong political and social support for its effective protection within the country. And if there are sufficient funds for ensuring harmonious and successful resettlement of the people from the national park. "If this is not the case, then we as FZS will have to consider withdrawing from Bale. We can't go on as before."

> 70 percent of Bale's Ethiopian Wolves died from rabies and canine distemper in 2019.

SERENGETI

PROTECTING AN ICON







For more than 60 years Serengeti has been a focus of Frankfurt Zoological Society. Zanne Labuschagne reports about recent developments.

Each morning at dawn Malale Muita heads out to monitor and protect the Serengeti National Park's endangered black rhino population. He has been working as a Tanzania National Parks (TANAPA) ranger in Moru Kopjes for over 25 years. Criss-crossing the area by road and on foot, he looks for tracks and signs and scans for rhinos through binoculars from the top of the large boulders that form the kopjes (rocky outcroppings) characteristic of Moru. These are long days often in challenging conditions; during the wet season the black cotton soil makes getting around extremely difficult. Anything that can make this work less arduous like good rations, operational equipment, and wellmaintained vehicles - goes a very long way to help rangers do their job effectively and to ensure that high morale is maintained to keep them motivated for the task at hand.

For as long as Muita has been doing this work, FZS has been supporting rhino protection in the Serengeti; providing ranger equipment and food rations, maintaining vehicles, and supporting tagging operations to fit rhinos with transmitters and notch their ears to make individuals more easily identifiable. In such a large and remote wilderness area, good communications networks are key to allow law-enforcement teams to effectively protect the park and its wildlife. Over the past year FZS has maintained, expanded and improved the park's digital VHF radio network, and, as a result, it was operational year-round without any major problems. In September 2019, sixteen rhinos were captured and had transmitters implanted and were ear-notched, mainly in the Moru-Maswa area, and Ndasiata, another rhino sub-population in the north of the park. Remote sensors using Long Range (LoRa*) remote tracking technology, already being effectively used to track park vehicles, are now also being trialled in rhino transmitters. Thanks to the Tanzanian Government's dedicated conservation efforts, in collaboration with FZS, the Moru black rhino population has increased more than tenfold in the past twenty years.

Rhinos aren't the only species on the rise; large mammal populations in the Serengeti National Park as a whole are stable or increasing. Historically, one of the biggest threats facing Serengeti's wildlife has been poaching for bushmeat, primarily using wire snares. De-snaring teams, using a combination of ex-poacher bush-knowledge and the mandate-to-arrest of TANAPA rangers, are having a huge impact on dismantling wire snare poaching in the park. In 2019, the two permanent de-snaring teams, as well as a third team operating during high-risk poaching months, removed over 13,000 snares, with over 8,000 of these being removed from the Lamai area when three teams were in the field almost full time. After three years of tireless efforts by the de-snaring program, there are early indications that the number of snares being illegally placed is decreasing.

"I understand that it is not good to kill wildlife – now instead of hunting animals, we protect them."

Ronald Mochomba, former poacher

The Serengeti National Park is not fenced and as such, cannot be protected as an island in isolation. FZS-SEMA works to secure the wildlife dispersal areas of animals moving outside the boundaries of the Park. The project has helped spearhead the facilitation of "Community Conservation Banks" (COCOBAs) in the villages within and immediately adjacent to the Wildlife Management Areas (WMAs) on the park periphery. These are savings and loans groups that are linked tightly to conservation principles and actions. In 2019, nine new COCOBA groups were formed in six villages in Serengeti District. Together these groups manage capital holdings equivalent to about 630,000 Euros, benefiting over 2,400 community members (56 percent of which are women), and provide a powerful resource for conservation compatible development in the villages.

The COCOBAs can be a good way out for people involved in – often risky and dangerous – illegal activities in the park. Ronald Mochomba, who is now a desnaring team member, poached in the Serengeti for fifteen years. He was recruited to join the de-snaring program three years ago, through buy-in with COCOBA. Bringing his invaluable knowledge of how wire snare poachers operate, Ronald is a great asset to the team. Tackling bushmeat poaching threats with his fellow team members, all also ex-poachers recruited through their involvement with the COCOBAs, Ronald says that, "I understand that it is not good to kill wildlife – now instead of hunting animals, we protect them."

SERENGETI IS NOT PASTURE LAND

Another threat to the Serengeti's wildlife is competition for resources through illegal incursions by cattle and herders. This is a particular problem for big cats, like cheetahs, which might stop using areas where a threat from herders is perceived. Last year funds were secured for a second Livestock Law Enforcement team. These two teams operate using off-road motorbikes, allowing them to quickly cover large areas, including zones with little road access. The team members receive extensive off-road motorbike riding and trauma first aid training before deployment. Heading off into the field for ten-day patrols using a custom-built trailer to carry the bikes and all necessary equipment, the teams sweep high-risk areas for signs of cattle incursions, often working in conjunction with an aircraft. Cattle found in the park are seized until the perpetrators pay fines, calculated per head of livestock, to the park authorities. As a result of these efforts the presence of cattle herder camps within the Serengeti has been almost completely stopped, and herders now seldom enter the park with their cattle during the day. However, people illegally bringing livestock into the park appear to have now shifted their modus operandi to enter under the cover of darkness. Plans are underway to allow night-time operations by the Livestock Law Enforcement Units, using night vision goggles and a custom-built open vehicle.

From the air, the FZS Husky spotter aircraft continues with aerial patrol flights, to detect poaching activities – in particular, the presence of elephant carcasses and bushmeat poaching camps – throughout the year. Captain Ramadhani (Rama) Bakari, the TANAPA Conservation Officer and Pilot who completed his training through funding from FZS, continues to rack up flying hours and experience. Rama is a dedicated conservationist with a passion for protecting this important ecosystem. In his words, "Flying over the Serengeti feels like I am living my dream." Rama explains, that in a two-hour flight you can get a glimpse of what is going on in the park in terms of poaching activity, wildlife distribution and the presence of fires. This information is then passed on to the authorities on the ground who can be quickly deployed to deal with the issues detected by the plane.

The information collected by the de-snaring teams, aerial patrols, motorbike units and rhino monitoring rangers is all fed back to the Serengeti Operations Center (SOC). The Operations Center, built and equipped by FZS, is the central hub through which TANAPA law enforcement decisions and incident responses in the park are made. By gathering all information coming in from the field here, a database is continuously being built up on the poaching situation – where it is happening, the intensity in different zones, high-risk areas for illegal incursions. As a result, this information helps wardens and park management to adapt protection efforts in the different sectors of the park to effectively tackle these threats.

CORONA - A NEW THREAT

At the time of writing, as the world collectively navigates these unprecedented times, the Serengeti is facing one of its biggest challenges yet. International tourism ground to a complete halt in the Serengeti from the end of March 2020, and heading into the second half of the year the return of tourism is worryingly slow. Lack of tourism revenue has placed the funding for the management and protection of the Serengeti in crisis. FZS activities have been ongoing throughout the pandemic with many efforts to support our partners bolstered during this time. For example, additional financial and technical support has been provided for the maintenance of vehicles, funding rations and fuel for more of the park's protection teams, and more aerial patrols to help boost coverage while the park is empty of tourists and, therefore, at a greater risk of illegal incursions. A lot is at stake, but as Rian Labuschagne, Serengeti Conservation Project Leader states, "FZS has a long history in the Serengeti and we are standing strong with our partner, TANAPA, to tackle this crisis together; through perseverance, collaboration and support from our donors, I am confident that we can work towards the best outcome for the Serengeti and the surrounding communities."





FZS staff servicing the rangers' vehicle fleet despite the COVID crisis.

Rian Labuschagne uses the FZS Husky aircraft for aerial patrols.

SELOUS GAME RESERVE

FROM GAME RESERVE TO NATIONAL PARK

In 1982, the Selous Game Reserve made it onto the World Heritage List. With this, the international community recognized the "Outstanding Universal Value" of the Selous as one of the largest remaining wilderness areas in Africa, with relatively undisturbed ecological and biological processes and exceptional biodiversity. The Selous Game Reserve has been conservation's problem child for the last few years as the construction of a massive hydropower dam progresses at Stiegler's Gorge. UNESCO reiterated its grave concerns surrounding the potential damage to the area's values that would result from constructing the dam on the Rufiji River within the World Heritage site. However, the preparatory work for the construction of the Nyerere Hydropower Project continues, with construction teams in place in the Park, while other laborers are bussed in and out of the site in shifts.

There is also positive development: the Tanzanian Government formally established Nyerere National Park in November of 2019. This officially brings five of eight sectors of the Selous Game Reserve into the new National Park. The three remaining sectors continue as the Selous Game Reserve. Tanzania National Parks (TANAPA) started to deploy staff to the new national park, and the handover process of management and assets has begun. FZS has secured third party funding from KfW and the Lion Recovery Fund to continue supporting both TANAPA, in the National Park, and TAWA, in the Game Reserve. This support encompasses law enforcement vehicle maintenance from our workshop at Matambwe, as well as support for aerial surveillance.



MAHALE MOUNTAINS

CHIMPS AT MIDNIGHT

Do chimpanzees roam the forests in the middle of the night? In Mahale, apparently, they do. A chimpanzee census was completed last year with FZS logistical support in Mahale National Park on the shores of Lake Tanganyika. The results show a stable number of approximately 700 to 800 chimps in the park. Every site visited displayed signs of chimp presence, which is different from the previous perception that they are only concentrated in some areas. And as an additional surprise, chimpanzees were observed with camera traps moving at midnight – a new recording for the park. In 2019, FZS also made good progress in securing the dispersal areas used by chimpanzees and elephants outside the national park. In Tanganyika District, the final gazette notice for the 365,000 hectare District Tongwe West Forest Reserve was received, and in neighboring Uvinza District, FZS, together with partners, undertook further work to establish a critical habitat corridor as the new District Forest Reserve.

A major threat outside of the National Park remains the movement of agro-pastoralists with large herds of cattle from other parts of Tanzania. They are practicing a particularly destructive form of slash and burn agriculture. In response, FZS supported the District with joint patrols for the Tongwe West Forest Reserve. This contributed to raising awareness in the communities that the protection status of the forest had been upgraded and helped to reduce illegal activities.

ΤΑΝΖΑΝΙΑ

Mahale Mountains National Park NORTH LUANGWA

A CONSERVATION SUCCESS STORY

North Luangwa National Park FZS has been working with the park authorities in North Luangwa for 35 years to protect the park and the surrounding ecosystem. The team spirit and the holistic approach to a structured program make North Luangwa National Park a shining example of nature conservation.

Upon arriving in the villages on the edge of the North Luangwa National Park, Community Officer Francis Mapenga encounters people who are less than enthusiastic about elephants. As the Park is not fenced, the animals are free to roam and they stray into the farmers' fields where crops are simply too great a temptation. There is a steady stream of troubling incidents with elephants trampling and devouring harvests and destroying huts – and in the worst cases, causing injuries or deaths among the villagers. Francis wants to change that. During the "Frankfurt Spring School on Conservation Project Management" held in Frankfurt at the beginning of 2020, the Zambian national was able to submit a project proposal and obtain funding from the KfW Foundation for his project to set up the best possible system



Thanks to intensive monitoring of rhinos and elephants the NLCP team knows the location of the animals as well as how to protect them effectively across the ecosystem.

for reducing elephant conflict in two villages within the Mukungule Game Management Area. "The project will implement a sustainable human-wildlife conflict mitigation and monitoring system, and will train farmers in mitigation measures," says Mapenga.

Chili cultivation is a good example of how all this can come together. By the end of 2019, the North Luangwa Conservation Program had trained more than 600 farmers how to successfully grow, dry and store chili.





A workshop and mechanics are essential for operations in the National Park.

Some of the reintroduced rhinos need a little extra care.



Francis Mapenga talks to a farmer in whose village elephants have just destroyed a hut.

"We want to establish a good monitoring system and also show the farmers how they can avoid conflicts with elephants."

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Francis Mapenga, FZS Community Officer Chili is a product that sells well locally providing an income, and it can also be used for repelling elephants. "This is why community involvement in conservation efforts is of extreme importance," says Francis Mapenga. "The community should be able to maintain their conservation attitude towards the elephant despite its impacts on the local livelihoods, if the reduction of the conflict is visible."

The FZS North Luangwa Conservation Program works with 32 communities around the North Luangwa National Park, covering various aspects, including economic development in the villages and training



In 2019, *Community Conservation Banks* (CoCoBas) were founded in Mukungule, Chifunda and Chikwa. CoCoBa members can get loans for conservation friendly activities.

In 2019 Sambia-Hilfe and Bengo/BMZ financed four boreholes in the Chikwa region to improve the supply with drinking water.

courses aimed specifically at women. Such focal points ultimately help raise the acceptance of the National Park by the local people, putting nature conservation on a firm footing there. The overall package also includes diversifying the income of the people in the villages and creating alternatives to agriculture. One such potential is tourism. Last year FZS joined forces with the Community Resource Board in Mukungule to set up Samala Camp – a small tented camp near the entrance to the Park – where tourists can stay and the first visitors have already overnighted there!

SYSTEMATIC PROTECTION OF A UNIQUE ECOSYSTEM

North Luangwa ecosystem is an undisturbed wild landscape covering 22,000 square kilometers in northeastern Zambia. It consists of a national park and four game management areas surrounding it. The Park is home to the country's only black rhinos and Zambia's largest and fastest growing elephant population. The Luangwa Valley is also one of the last ten lion strongholds in Africa. This is thanks to 35 years of successful cooperation between the Zambian Department of National Parks and Wildlife (DNPW) and FZS. The population of black rhinos, which was resettled in 2003, is seeing rapid growth; efforts to protect them from poaching have so far been successful. The poaching of elephants is also declining and 2019 saw the lowest ever number of incidents in the entire ecosystem.

Protecting a wilderness the size of North Luangwa requires a large and very wellstructured team of rangers. Thus, the North Luangwa Conservation Program last year supported the missions of 170 DNPW staff members, including the elite Rhino

and Elephant Protection Unit, 160 Community Scouts, ten intelligence and investigations units, and one canine unit with food, equipment and training.

Joyce Chiluba is a DNPW Wildlife Police Officer, and a member of the North Luangwa Canine Unit. She works daily with the detection and tracker dogs, which are trained to sniff out ivory, rhino horn and other animal products such as lion bones or python skin during operations. Joyce is one of thirteen handlers in the North Luangwa Canine Unit working five dogs. "The dogs can find them if people are hiding them," says Joyce Chiluba, "especially if we have to search properties in the dark."

DNPW's Intelligence and Investigations Units cooperate with Police and the Drug Enforcement Commission in tracking down illegal wildlife and endangered hardwood across northern Zambia as far afield as the Tanzania and Malawi borders, where the smuggling of illicit products, such as ivory, is flourishing. Ivory, pangolins, bushmeat and large quantities of weapons and ammunition were found last year.



"The dogs help us track poachers when they escape and especially when we have to search houses in the dark."

> *Joyce Chiluba,* Wildlife Police Officer

Joyce Chiluba is one of 13 dog handlers working for the North Luangwa Canine Unit which comprises of five dogs and four vehicles.

A SOLID BASE FOR NATURE CONSERVATION

The basic tenet of environmental education – "people only value what they know and they only protect what they value" – has been proven true in North Luangwa. The *Lolesha Luangwa* (meaning 'look after Luangwa' in the local Bemba language) education program is bearing fruit: running for many years now, it has anchored Zambian fauna and its protection in the minds of many children by delivering outreach events, staging theater performances in schools, and by giving them the opportunity to experience wildlife at first hand during visits to the Park. Of the 44 ranger recruits who successfully completed their training in 2019, 25 discovered their passion for local wildlife after taking part in the *Lolesha Luangwa* program as grade 6 school children.

A shift has also been noted in the attitudes of the adults. There are now 25 Community Conservation Banks (CoCoBa) groups in North Luangwa, with 699 male and female members. These CoCoBas function as small, self-governing cooperative banks. People can apply for loans from their local group to set up a small (conservation-friendly) business. In 2019, a survey given to CoCoBa members unveiled the benefits they have on nature conservation with the economic situations of individuals being improved, and their knowledge and attitude towards resource protection changing for the better.

READY FOR THE RHINOS AND LIONS TO RETURN

Nsumbu ANATIONAL Park

ZAMBIA

Preserving the diversity of Nsumbu through professional conservation area management – the goal of the Nsumbu Tanganyika Conservation Program. A well-trained ranger unit is playing a key role.

The Nsumbu Mweru ecosystem in the northeast of Zambia covers an area of 10,000 square kilometers. It includes two game reserves and three national parks. One of these protected areas is Nsumbu National Park on the shores of Lake Tanganyika. In the past, Nsumbu was renowned for the large herds of elephant and major populations of black rhino and lion that roamed the entire region. But the situation changed for the worse during the 70s and 80s. A combination of hunting, poaching and inadequate protection over decades led to the complete annihilation of the black rhino in Nsumbu, and widespread decimation of the elephant population.

FZS set up the *Nsumbu Tanganyika Conservation Program* in 2017 to change this dire situation and to improve protection of the park and other aspects of the ecosystem. The close cooperation between FZS and Nsumbu National Park is based on a ten-year agreement with the Government of Zambia. FZS is focusing

on supporting the work of rangers and their equipment supply, working with communities, and restoring wildlife populations. In 2019, the focus was on ranger selection, providing training and equipment for them and planning their deployment.

Today, there are 70 rangers on 15 teams who continuously patrol the Nsumbu ecosystem in northern Zambia. Many of the rangers come from the surrounding communities. Their tasks include confiscating illegal homemade firearms and collecting snare traps. FZS Project Manager, Craig Zytkow, reports on the first positive results: "The rangers now patrol on a permanent basis in Nsumbu and around Lake Tanganyika. This has resulted in much less poaching. The elephant population is also recovering. We're seeing more and more young animals, and the herds seem less stressed. This is proof of our success." The tireless work of the rangers has brought about a distinct improvement in the security situation in Nsumbu. The ground has been prepared for reintroducing some key species such as lion and black rhino in the next few years.

ZAMBIA

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GONAREZHOU

A SAFE HAVEN FOR WILDLIFE



For more than four years the *Gonarezhou Conservation Trust* has been managing the national park. This cooperation between the park authority and FZS has proven to be effective. The Gonarezhou National Park is on a good path.



Home to about 11,000 elephants, the Gonarezhou National Park truly deserves its name as the 'Place of Elephants.' And perhaps even more since 2019. Last year saw the lowest number of elephants lost to poaching in Gonarezhou National Park for any year on record in the Park's history. "Only a single elephant carcass, that can be attributed to poaching was found close to the Mozambique boundary," reported Elsabe van der Westhuizen, Technical Advisor for the FZS Gonarezhou Conservation Program. However, it does not mean that the Park is free from poaching pressure, at least six elephants were killed just across the border in the Mozambique hunting blocks, one as close as 300 meters from the Park boundary. "Whilst elephant poaching seems to be very much under control within Gonarezhou at the moment, our intelligence points to ivory smuggling still taking place through the corridor to the south of the Park, potentially from animals shot in Mozambique," remarked Elsabe van der Westhuizen. Furthermore, pressure through fishing and bushmeat poaching is ongoing, requiring a more nuanced and holistic response from the Gonarezhou Conservation Trust (GCT).

The Gonarezhou Conservation Trust, a partnership between Frankfurt Zoological Society (FZS) and the Zimbabwe Parks and Wildlife Management Authority (ZPWMA), was established in 2016, and has a 20-year mandate to manage the Park in Zimbabwe's South-East Lowveld. Since its founding days, the Trust has made substantive gains in its conservation mandate, as well as improving the Park's long-term financial sustainability by both expanding its donor base and growing its tourism offering and income. An important focus for



GCT Chilojo Club's Ezekia Chauke (right) is entertaining the children of the Makhosiya Primary School near the Park border with his stories about wildlife.

GCT is improving relationships with adjacent communities and ensuring that these communities have a stake in both the benefits as well as the responsibilities that accrue by living in close proximity to a protected area as significant as Gonarezhou.

"We embarked on a movement called 'Mpfhuka,' which means 'a journey' in Shangaan, and which we see as an ongoing process to engage in dialogue with communities and strengthen our relationships," added Elsabe van der Westhuizen. Five Mpfhuka catchment areas have been designated around the Park and regular meetings aim to foster discussion about the mutual costs and benefits of being neighbors for communities and the Park, so that benefits can be highlighted and costs minimized.

TOURISM IS A CHANCE FOR COMMUNITIES

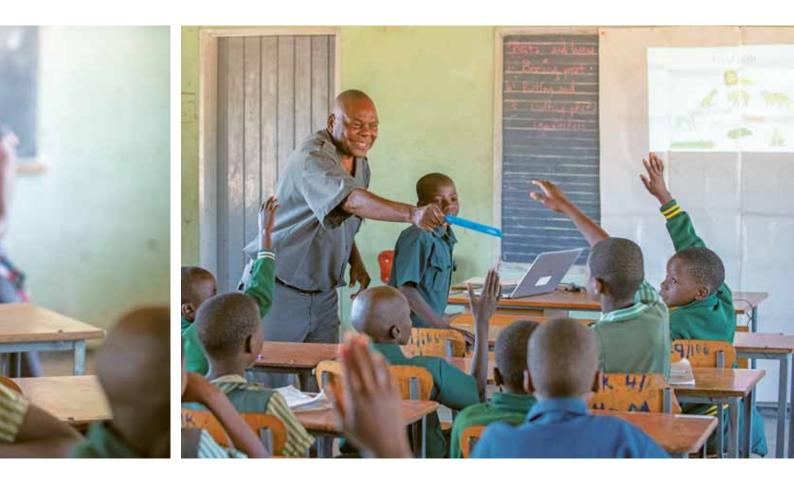
In our Makonde community training facility, which aims to train chefs, camp attendants and trainee guides, the first cohort of camp attendants successfully passed through and the first group of six chefs started their training last August. Their three-year program will eventually lead them to not only be equipped to be chefs at the various tourism facilities in the Park, but also achieve a nationally-recognized qualification. Despite the challenges that the tourism industry experienced in Zimbabwe in 2019, all of our tourism indicators are showing a positive trend; most notably with regards to revenue generated, and this despite the fuel shortages, currency issues and the hyperinflationary environment prevalent in Zimbabwe.

Not only is tourism showing a positive trend in Gonarezhou, wildlife is also doing well. Wild dogs are maintaining their population at around ten to twelve packs, with more than 120 adult dogs. Lion numbers and sightings continue to increase, with the Park's lion population now estimated to be in the order of 120 adults. Tourism sightings of predators are on the increase, which is a testament to both increasing numbers, as well as habituation of the population. Cheetah numbers remain low, with only intermittent sightings, but this is potentially linked to habitat suitability and competition with the other predators.

IMPROVING LAW ENFORCEMENT

At the heart of Gonarezhou's success is a well-trained and highly-motivated ranger team. Each ranger visits the training center at Chipinda Pools for two 10-day periods every year, where field skills are reviewed and reinforced, rangers learn new techniques and enjoy lectures by staff in other departments such as tourism and ecology. "We find that the team-building impact of these refresher sessions is proving invaluable in molding the ranger force into an effective unit," Elsabe van der Westhuizen highlighted.

Investment into Gonarezhou's intelligence capacity is currently a focus for the law enforcement department and the impact of the intelligence unit is already being felt with regard to the rise in arrests of middlemen trading in bushmeat, fish, and



the confiscation of pangolin in the wider landscape. A Husky Aircraft, donated through the Wildcat Foundation, has also been a big boost for the ease and effectiveness of aerial patrols, and will make a big impact with regards to options for monitoring ranger patrols, fire management, following up on cattle rustling and general management support in the future. The Park's western boundary, and northeast corner remain the key problem areas for illegal fishing, livestock grazing and hunting with dogs - but, there has been hardly any detection of commercial poaching or poaching linked to illegal wildlife trade within the Park in this past year. In 2020, we will be focusing on finalizing preparations for a long-planned reintroduction of black rhino into the Park, with the recruitment and training of additional rangers, and setting up of an intensive protective zone with fence and ranger pickets, based on the North Luangwa model.



A basic camp site in breathtaking landscape – the sustainable tourism concept in Gonarezhou is off to a good start.

LOMAMI

A YOUNG PARK IN A CHALLENGING ENVIRONMENT

ICCN ranger in Lomami National Park

PROJECT START: 2019 PROJECT AREA: 8,874 km² (park), 40,000 km² (ecosystem) LOMAMI CONSERVATION PROJECT

In 2019, the project to protect Lomami National Park joined the Frankfurt Zoological Society's portfolio and has grown to become both a park protection and a community conservation project. Thirteen years ago, in 2007, a small team of Congolese explorers led by John and Terese Hart set out to discover a little-known area in Central DR Congo, the forests crossed by the Tshuapa, Lomami and Lualaba Rivers – thus called the TL2 forests. An impressive 8,874 square kilometers that include forest, edaphic savanna, low hills and numerous waterways. During two years on foot and in a dugout canoe, the project discovered many of Congo's most iconic species: bonobos, the endemic great ape, the Congo peacock, the rainforest giraffe, or the okapi. Remarkably, the TL2-team also discovered a new species of monkey, the Lesula (*Cercopithecus lomamiensis*). However, it soon became clear that wildlife in Lomami was severely threatened by bushmeat market hunting. The park itself includes no human occupants, but there are more than 90 villages within 25 kilometers of its border.

Working in close coordination with communities, provincial authorities, as well as the protected area authority, *Institut Congolais pour la Conservation de la Nature* (ICCN), the TL2-project set up two regional reserves that together became the Lomami National Park in July 2016, becoming the Democratic Republic of Congo's eighth national park. In 2019, the TL2-project joined the Frankfurt Zoological Society's portfolio as the Lomami Conservation Project and has grown to become both a park protection and a community conservation project.



Most rural areas in DR Congo are impoverished and isolated. In the case of the buffer zone of Lomami National Park, the villages are connected only by bicycle paths and have no telephone towers. Often no security or other state authority is accessible to residents. Villagers need cash to support their children in school, seek health care and buy basic subsistence supplies. Cash is derived from natural resources through hunting or agriculture. For the long-distance rides by bicycle or motorbike to bigger markets, however, people favor loads that have higher cash value per weight such as dried fish or dried bushmeat. But the commercial bushmeat market threatens to empty buffer zone forests of game animals, thereby putting more pressure on the park and as a result increasing park conflict with the surrounding communities. To endure the protection of wild buffer zone resources, we seek to work with the com-



Dried fish is an important source of protein for the people living in the Lomami region.

munities to find viable alternatives to hunting. In the meantime, we have helped local hunters establish the legality of their offtake outside the park through a "voucher" system, allowing them to carry meat hunted on one side across the park to sell it on the other side.

Compounding the problems of rural isolation and poverty are Mai-Mai elements that persist after the prolonged Congolese wars of 1996 to 2005. Mai-Mai leaders use violent coercion to suppress local opponents and have a populist and despotic message to gain control of local resources such as bushmeat and ivory. A handful of these Mai-Mai have had control over more than half of the buffer zone at different times over the past seven years. They push an anti-park, anti-development message destroying fish ponds, threatening to burn schools and burning park guard posts. Villagers flee, abandoning gardens, losing harvests and thus become even more dependent on hunting. Without a governmental presence to promote development and control criminal activities, the communities develop mistrust and defiance of outsiders.

Operating from eight patrol bases outside the park, last year the project carried out 178 foot patrols and 43 dugout patrols. On land, the teams covered over 13,000 kilometers. Those patrol teams consist of project staff and armed park guards, who have the authority to make arrests. In total, 133 arrests were made. Hunting camps were encountered particularly in the central and northwest of the park with the greatest number of snares in the southern half.

However, the primary project activities of the *Lomami Conservation Project* in 2019 were regular surveillance and bio-monitoring of all 8,874 square kilometers of Lomami National Park. The highest concentration of bonobos continued to be in the south and of elephants in the north of the park. Nevertheless, more and more effort was invested in working with local communities on alternatives to hunting, the main source of cash income in the villages of the buffer zone.

Recognizing that commercial bushmeat is currently an essential part of the buffer zone economy and that all hunting is forbidden inside the Park, our project has an alternative livelihoods program promoting private fish ponds and fish pond collectives. Now more than 50 households in 16 villages have fish ponds. Bushmeat monitoring since 2009 has indeed shown a decrease in bushmeat loads coming into the main town of Kindu by more than 30 percent, mainly due to more domestic meat being available on the markets, such as beef or goat. But this also comes with a price for nature: more and more savannahs are being drained, to dry them up for livestock farming.



WHERE THERE IS CONFLICT OVER RESOURCES, WE NEED CONSERVATION."

Dr. Terese Hart and her husband Dr. John Hart have been in Lomami for more than ten years and are organizing the development of the national park together with the park authorities and a strong Congolese team.

What exactly does the FZS project in Lomami do?

Terese Hart: We provide practical support to the park administration in controlling the national park. This means deploying patrol teams that check on illegal activities in the park, such as illegal hunting.

Do these teams also monitor animals and plants?

Yes, they do. During their day-long patrols through the impassable forest and savannah terrain of the Park, the men also record data on animals, plants and ecological parameters. In doing so, more and more distribution maps and population data of many rare species are slowly coming together. Without this, it would be difficult to evaluate changes. Moreover, the rather unexplored Lomami forest has many surprises. We see these with camera traps but also with "morning dawn counts" or the recording of the morning

calls of the different monkey and other species. From this, our biologists collect important information.

What do those patrol teams look like?

There are eight base camps outside the park boundaries from which the teams operate. Each team goes on a patrol for several days twice a month. These teams consist of two of our staff and two armed park rangers. Our staff are biologists or have other college degrees and are responsible for scientific data collection. The team is joined by a whole squad of porters who are hired locally, as all equipment, fuel and food has to be carried on their backs, in canoes or by motorcycle.

Why do armed rangers go along?

They are rangers of the park authority ICCN and the control of the park is their job. Without armed protection, patrols would be nearly impossible. Our staff have faced armed groups during their patrols in the forest quite a few times. The situation here escalates very quickly and easily. In spring 2019, for example, 100 people were killed in the villages east of Lomami by rebels and rival criminal groups.

When the park was founded in 2016, was there any resistance?

Of course, not all villages were in favor. There were also those who lost parts of their land and they were understandably against it. But the park was ultimately a decision made by the government. There is also a tradition here that the villages always decide as a whole. That is, they withdraw for consultation and that goes on for hours. But in the end they come back with a joint decision that not everyone is happy with, but which they support, for better or worse. And this decision was for the Park. This allowed the government to decide in favor of the Park.

Where can people complain when they are wronged?

There is the possibility to complain to the "military court" or to the provincial government. That's where people go when they feel they've been wronged.

Does conservation have a chance in a difficult environment like in Lomami?

It must. Where there are people and the conflict between resource use and protection is growing, we need conservation efforts more than ever. So far Lomami has benefited from its remoteness and the low population density. Therefore, it is extremely important that we act now. At the moment we still have the opportunity to set the right course with education and community development.

Ultimately, the local people must take responsibility. Is Lomami on the right path?

It's still a long way to go to achieve fair "community concessions", forest areas around the Park where the communities protect and manage the resources themselves. But some communities will get there, I'm sure.

Dr. Terese Hart

CARPATHIANS

BETTER PROTECTION FOR CARPATHIAN FORESTS

13 protected areas are located in the Ukrainian Carpathians. For them to function, it is not enough that they exist on paper. In 2019, FZS was able to raise two million Euros from the German Federal Ministry of the Environment, Nature Conservation and Nuclear Safety to provide five national parks with the necessary equipment and to support their development.

POLAND UKRAINE SLOVAKIA

A beautiful forest in the Carpathian Nature Park in Ukraine. "We are also promoting the establishment and further development of small and medium-sized enterprises that work hand-in-hand with nature conservation."

> *Michael Brombacher, Head of FZS Europe Department*

The signature was added at the last minute. A few days before he was replaced by Volodymir Zelensky, former Ukrainian President, Petro Poroshenko, signed a decree in the middle of April 2019. This was an important step to protect the Carpathian forests. Poroshenko's decree established the new 12,000-hectare Boikivshyna National Park in the region bordering Poland and Slovakia. Not too far away is the Uzhansky National Park, with its huge beech forests, which was expanded by 12,000 hectares. Almost half of the park consists of valuable virgin forest.

There are several large national parks in the border area between Poland, Ukraine and Slovakia. On the Polish side is the Bieszczady National Park. Along with a number of Ukrainian beech forests, parts of the Poloniny National Park on the Slovakian side are listed as UNESCO Natural World Heritage sites. The new Boikivshyna National Park and the expansion of the Uzhansky National Park created further links in this network of protected areas last year. Roaming over large areas, predators such as the brown bear or the lynx benefit from the network, as do the bison which have been introduced on both sides of the Polish-Ukrainian border. They can now establish a crossborder population.

There are 13 major protected areas in the Ukrainian Carpathians. In order to function effectively, they must do more than simply exist on paper. "The parks need an administrative organization – and a management plan that sets out the goals and tasks for the coming years. Also needed are well-trained rangers with good equipment to prevent poaching and illegal logging," says Michael Brombacher, Head of the Europe Department, who is responsible for the FZS Carpathian Program.

According to Brombacher, the Ukrainian state budget includes next to no funding for this. Without international help the national park administrations would be left to their own devices: rangers and park employees would have to use their own private vehicles, for example. The administrative buildings and ranger posts are in poor condition, which does little for the image of the parks.

In 2019, FZS was able to raise two million euros from the German Federal Ministry of the Environment to fund the basic necessities for the five national parks and support their development. Since 2016, around 14 million euros have been made available for eight additional major protected areas. This money has been used to buy vehicles and uniforms for rangers, to develop management plans for the areas and also to promote soft tourism. Much of this equipment should be accquired during the course of 2020.

WOLF MOUNTAINS - SMALL STEPS TOWARDS WILDERNESS

The Wolf Mountains lie in the eastern Carpathians, in the border area between Poland, Ukraine and Slovakia. What sounds like secluded wilderness is actually a mosaic of old forests, wetlands and grasslands. Together with our project partners, we are planning a network of wilderness areas covering around 100,000 hectares, with the Bieszczady National Park at the center.

Extending protected areas in the Polish part of the Wolf Mountains represents a major political challenge: in many cases it is the Ministry of the Environment itself that is obstructing the nature conservation work. Decisions are guided by short-term economic interests, while hunters and foresters receive generous support. Never-theless, some small improvements have been made: "13 of the 37 applications that we submitted for the establishment of minor protection zones for protected animal and plant species have been approved," says Brombacher. "And we have halted deforestation and imposed a hunting ban on 14 tracts of private land in a small area of forest in the Bieszczady Mountains."

In Slovakia, by contrast, the main focus of the Wolf Mountains project is on promoting acceptance, as currently only twelve percent of the park area is strictly protected. One of the aims of the project is to show people living around the Poloniny National Park how they can benefit economically from the National Park while also supporting nature conservation. "Our project partner Aevis set up a website for the Poloniny National Park in 2019 to promote tourism and local products that meet high social and ecological standards," says Michael Brombacher. This will allow the national park to develop into a brand that embodies responsibility and sustainability, but that also provides a source of income for the local population. The fact that parts of the National Park already belong to the UNESCO World Heritage is an advantage.

"We are also promoting the establishment and further development of small and medium-sized enterprises that work hand-in-hand with nature conservation," says Michael Brombacher. Two such examples include companies that produce typical regional products – syrup and pirogis. Both companies already support nature conservation activities in the region.



Small-scale producers of local organic products such as herbal teas (here the drying of tea), honey or syrup profit from conservation and vice versa.

EUROPEAN "YELLOWSTONE" EMERGING IN THE ROMANIAN CARPATHIANS

FZS is also working to protect the forests in Romania, namely in the Fagaras Mountains. It has been collaborating with the *Fundatia Conservation Carpathia* (FCC) on this for many years. The Foundation is committed to preserving large areas of forest and to replanting cleared areas in an effort to prevent landslides on the slopes. *Fundatia Conservation Carpathia* owns more than 24,000 hectares of land, 2,173 hectares of which were purchased in 2019. This land is now strictly protected.

However, not all the land that the Foundation would like to buy for nature conservation is for sale. Plans for a so-called *Conservation Easement* program are therefore being drawn up. "Under this program, private landowners can volunteer to limit the use of their land for the benefit of nature conservation – on a legally binding basis and without any time limit," explains Michael Brombacher. The 65,000 hectare hunting concession, which is managed by *Fundatia Conservation Carpathia*, shows that it is not necessary to own land in order to protect it. Here, nature is allowed to develop freely, and hunting has been abolished.

Like everywhere else, the acceptance of the local population is crucial if nature conservation is to succeed in Romania. "Communication is so important because there is hardly any political backing for nature conservation and for establishing new protected areas in Romania," says Michael Brombacher. The Foundation cultivates regular exchanges with the local population in the form of discussions, excursions and celebrations. It also provides practical support by equipping farmers with electric fences and dogs to protect their herds from bears or wolves. Two Rapid Intervention Teams were set up last year which can be called in to help resolve any acute conflict between humans and wildlife quickly and professionally. The reforestation workers also come from the project region. This increases the acceptance of nature conservation and the sense of responsibility among many locals for the forests. The Foundation has already planted 438,000 trees.

GROWING WILDERNESS IN GERMANY

Manuel Schweiger, head of our Germany program, explains how FZS is helping to expand the area of wilderness in Germany on a permanent basis.

During the year 2019, foundations were laid to increase wilderness in Germany. FZS and the "Wilderness in Germany" initiative had a lot of persuading to do in order to reach this point. However, the work will pay off in the coming years and will yield quantifiable results in the form of new wilderness areas. The Federal Government established the Wilderness Fund (Wildnisfonds) last year, which is now set to play an important role. It allows Federal Environment Ministry funds to be used to purchase land for new wilderness areas – or their permanent rights of use. The launch of the Wilderness Fund was officially announced at a symposium organized by FZS and the Brandenburg Wilderness Foundation in Dresden in June 2019 as part of the "Wilderness in Dialog" series of events.

The year before, the Federal Government had included the establishment of a

wilderness fund into its Coalition Agreement. The result of countless discussions with political decision-makers, this represented a great success for us and our partners in the "Wilderness in Germany" initiative. But the fact that a proposal is included in a coalition agreement is no guarantee that it will be implemented, which is why we kept up the pressure and worked hard to make the fund a reality.

FZS is providing technical support for the introduction of the Wilderness Fund and will receive three years of funding from the Federal Agency for Nature Conservation. We identify suitable areas of land and advise the buyers and sellers during the negotiations, if required. We also work to relieve the buyers of additional financial burdens. The Wilderness Fund covers up to 100 percent of the purchase price, but this does not include any subsequent land management costs such as taxes and levies which the owner must pay. We have already taken the Wispertaunus forest in the Rheingau region to the next stage. This is the largest contiguous area of forest in Hesse. Together with the local foresters, we have selected a number of areas that will be left entirely to their own devices in the future. The valuable hillside forests in Wispertaunus are to receive permanent protection as part of a major conservation project.

In addition to Wispertaunus, FZS is calling for further new forest protection areas in Hesse. These plans are based on our "Land of Natural Forests – 25 forest protection areas for Hesse" (2018) study. We initiated and funded a similar study in Saxony in 2019. The first signs of success: the selected wilderness zones have since been included in the Saxon Coalition Agreement. In Brandenburg, too, the new government has taken up our suggestions: its Coalition Agreement also contains a commitment to declaring two percent of the state's land area as wilderness.

Before new wilderness areas can be established, advocates of the plans must first gain political and public support; such debates are often carried out at the local level, away from the public gaze. In recent years, we have been advising small citizens' initiatives on how to present their cases to decision-makers and influential bodies in a professional and targeted manner. Our new "Say it loud!" materials help small organizations with limited financial resources to make a big impact and to organize successful campaigns for protected areas in their own region.

The aim of the "Forest Wilderness 360°" video, which we produced in conjunction with students of the University of Applied Sciences in Trier and experts from the Senckenberg Museum, is to attract people to the wilderness cause and excite them about the projects. The video is available at Wildnis-in-Deutschland.de

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GERMANY

AN ANCIENT FOREST WITH A FUTURE

Though comparatively small as wilderness goes, it is constantly growing. There are 1,940 hectares of wild forest in the Hohe Schrecke region, northeast of Erfurt in Thuringia. This is about a quarter of the 7,300 hectare band of forest that stretches via Kyffhäuser and Hainleite to the Hainich National Park. The Naturstiftung David Foundation is helping ensure that more and more of this forest is taken out of forestry use and allowed to return to its wild state. FZS has been supporting this work since 2009. Our common goal is to leave nature to its own devices on at least 2,000 hectares of land.

For centuries it was only exploited to a negligible extent; this period was followed by 50 years of use as a restricted military ground. As a result, the Hohe Schrecke and its ancient beech trees became one of the oldest woodlands in Germany. The large number of dead trees offer excellent refuge for insects and mushrooms. All in all, a unique opportunity for an "old forest with a future."

In recent years Naturstiftung David has purchased 291 hectares in the Wiegental valley itself and the surrounding areas with their very old and impressive stocks of beech trees. And the largest swathe of ancient trees, covering around 1,500 hectares, is to be allowed to develop on the plateau. Both areas are linked by "stepping stone" biotopes and areas of near-natural forestry in between.

The project came a major step closer to reaching this goal in 2019: the State of Thuringia decided to discon-

tinue its management of 220 hectares of forest in the Hohe Schrecke region and to hand it over to nature conservation. Naturstiftung David has been advising the state government on which areas to select, ensuring that they are directly adjacent to an existing large area of natural forest on the plateau.

In addition, there is a good chance of hunting being banned on roughly 1,000 hectares of land in the wilderness areas of the plateau in the future. With the support of specialist consultants, Naturstiftung David has drawn up a hunting proposal. It is now trying to obtain the hunting rights for the land – or permission to purchase it. The decision will be made in 2020.

The Federal Government and the State of Thuringia are providing ninety percent of the funding for the largescale nature conservation project in Hohe Schrecke. FZS is financing the remaining ten percent and is also assisting the Foundation on technical issues.

Hohe Schrecke

GERMANY

BRANDENBURG THE WILDERNESS MAKERS

20 years ago, FZS was one of the founders of the Brandenburg Wilderness Foundation. It is still represented on the Foundation Board to this day. The Foundation secures – and forges links between – wilderness areas in Brandenburg to create the primeval forests of tomorrow.

In 2000, a foundation was established in the east of Germany which can confidently claim to be one of the first wilderness protection organizations in Germany: Stiftung Naturlandschaften Brandenburg (Brandenburg Wilderness Foundation). It initially purchased 3,756 hectares on the former Jüterbog military training ground with the aim of allowing wilderness to develop on a permanent basis. Two decades on, it now owns and manages a total of 13,600 hectares on four former military training grounds in Brandenburg. This was made possible with the help of Frankfurt Zoological Society (FZS), but also thanks to generous donations from various private donors and other sources.

The increase in space is impressive, as is the development of the former military training grounds into areas of genuine wilderness. Plant and animal species such as gray hairgrass or antlion larvae are now reclaiming their territory. Wolves have also returned; there are now three packs living on the Foundation's land. Elk roam through the region from the east.

Leaving nature to its own devices is a challenge in a densely populated country like Germany, as was shown by the major forest fires on the Foundation's land near Jüterbog and Lieberose in 2018 and 2019. The Foundation team along with the many rescuers (most of them volunteers) and local partners were stretched to their

limits by the fires. Arson was suspected as the cause and the dry weather allowed many of the fires to spread rapidly over several hundred hectares. The high level of munitions contamination on the former military training grounds makes it difficult to contain any fires. Unfortunately, it is a legacy which is not easy to deal with – and one which makes managing the land more difficult. However, it is a challenge which the Foundation has displayed a great deal of competence in accepting.

Climate change means that fires will play an increasing role in our ecosystems in the future. As a result, the Foundation has decided to launch a five-year research project into the importance of wilderness for climate change forests. In conjunction with the Eberswalde University for Sustainable Development, the University of Potsdam and other renowned research institutes, the model project financed by Waldklimafonds is conducting research into the development of forest fire zones in areas of wilderness and comparing these with forest fire areas in managed forests. We hope that the research will also provide useful insights into how forests in wilderness areas regenerate without human intervention.

LAND OWNED BY THE FOUNDATION HAS INCREASED FROM 3,756 HECTARES TO 13,600 HECTARES WITHIN TWO DECADES.

Jüterbog Lieberose

GERMANY

BIAŁOWIEŻA

WHERE MIRES AND WILD RIVERS KEEP THE FORESTS HEALTHY

BELARUS

Bielaviežskaja Pušča

SO FAR, 1,500 HECTARS OF FORMERLY DRAINED MIRES HAVE BEEN REWETTED.

The Białowieża primeval forest is a last remnant of the large deciduous forests that once stretched across the European plain. The forest, which is still largely unspoiled and is populated by oaks, lime trees, birches, hornbeams, spruces and pines, straddles the border between Poland and Belarus. It is protected on the Polish side by the 8,000 hectare Białowieża National Park, and on the Belarusian side by the 150,000 hectare Bielavieżskaja-Pušča National Park.

The Białowieża ecosystem, with its large mires in the east, has been profoundly shaped by man. Until the end of the last century, the rivers were straightened and the mires partially drained. Over the decades, this led to a drop in the groundwater level by more than a meter. As a result, tree species such as oak or spruce were no longer able to rejuvenate. Rewetting of the extensive mires was, therefore, an important key to restoring the Białowieża primeval forest. The mires are also breeding grounds for the globally threatened aquatic warbler.

The aim of our project in the Bialowieża and Bielaviežskaja-Pušča national parks is to re-establish primeval forest, to restore much of the existing infrastructure in the park, and to reduce the effects of human intervention in the area. We have been collecting scientific data since the beginning of the project which is now supporting us in making the case for more wilderness. In 2019, for example, we investigated the populations of forest-dwelling bats and recorded the populations of aquatic warblers

in the mires at the edge of the forest. The annual greater spotted eagle monitoring program was conducted again in 2019. They are highly sensitive birds which live in the transition zone between forest and mires. Their breeding status is therefore a good indicator of the "naturalness" of an area.

Since 2016, we have been working with our partners in Belarus to restore the mires on the eastern edge of the forest to their natural state. So far, around 1,500 hectares of formerly drained mires have been restored by filling in the drainage ditches. In 2019, a four-kilometer section of the Solomenka River was restored. The river had previously been straightened, but it now runs again in its original meanders. This has slowed the flow of the water and caused the water level to rise again.

Our efforts, especially in the Belarusian part of the Białowieża forest, have also led to progress in the plans for returning the rivers on the Polish side of the National Park to their natural state. Our work has even attracted global attention: the UNSECO World Heritage Committee commended the restoration work in Bielaviežskaja Pušča at its annual meeting in summer 2019.

WILDERNESS WITHOUT BORDERS

The Pripyat is still a free flowing river.

BELARUS/UKRAINE



Polesia is half the size of Germany and is one of the largest natural river landscapes in Europe.

> Polesia is a unique and wonderful landscape straddling the border between Belarus and Ukraine. Covering an area of roughly 100,000 hectares at the center of the region is the Almany Mire, the largest peatland in Europe. This mire is larger than Berlin. Climb up the observation tower in the middle of the mire and all you can make out is peatland and islands of forest as far as the eye can see. From afar you can hear the cranes trumpeting. The few roads which exist are unpaved and difficult to drive on; only with an off-road vehicle can you negotiate the sandy and boggy sections of the road, some of which are under water. The nearest villages are miles away.

> Almost 90,000 hectares of the Almany Mire are already protected. In 2019, a team of experts from the National Academy of Sciences of Belarus identified additional areas that are of value from a nature conservation point of view, and drew up an application to extend the protected area by an additional 10,000 hectares.



Ruffs in Polesia

The endangered greater spotted eagle loves this untouched landscape. Almost a fifth of all greater spotted eagles, and thus the largest population west of Russia, can be found in Polesia. But only in the Almany Mire are their numbers stable. In other parts of Polesia, their numbers are dwindling as they are worldwide. It is estimated that only 30 of these eagles are now living in the European Union. In order to find out why the population is steadily decreasing, we tagged 15 greater spotted eagles with GPS transmitters and installed camera traps in their nests during 2019. We wanted to find out the conditions under which the greater spotted eagle and its offspring have the best chances of survival and then use the results to draw up recommendations for their protection.

BIRD PARADISE ON THE BANKS OF THE PRIPYAT

There are large breeding populations of the greater spotted eagle in Polesia – but also of other species. Every year millions of waterfowl and wading birds gather on the banks of the River Pripyat to breed or rest on their migratory routes. A few years ago, ornithologist Pavel Pinchuk, who has been operating a bird ringing station on the Pripyat since 1999 and now works for FZS and APB BirdLife-Belarus, managed to count 120,000 ruffs in a single day. The largest European gathering of wigeons can be found here, too.

The vast Pripyat wet meadows provide the food and shelter these species need. The great snipe, for example, which is already extinct in Germany, benefits particularly from the rich supply of food in the flooded meadows before embarking on its threeday, non-stop flight to tropical regions of Africa. Its journey is a feat of strength, for which it builds up reserves in Polesia. The great snipe loses about 40 percent of its body weight on the journey. To find out the most effective way of protecting this species, Pavel Pinchuk tagged nine birds with GPS transmitters in 2019. They provide us with scientific data on behavior and habitat requirements of the great snipe – along with powerful arguments against the planned trimming of the statutory protection zone around their breeding grounds.



NATURE CONSERVATION ACROSS NATIONAL BORDERS

In order to preserve Polesia as a unique area of European wilderness, in 2019, four nature conservation organizations joined forces: APB BirdLife-Belarus (APB), the Ukrainian Society for the Protection of Birds (USPB -BirdLife in Ukraine), the British Trust for Ornithology (BTO) and the Frankfurt Zoological Society (FZS). As part of the Polesia - Wilderness without Borders project, which itself is a contributor to the Endangered Landscapes Programme (ELP) and is supported by Arcadia (a charitable fund set up by Lisbet Rausing and Peter Baldwin), we are working together to create a network of protected areas covering over one million hectares in Belarus and Ukraine. The project is also supported by the "Claus und Taslimawati Schmidt-Luprian Stiftung Vogelschutz in Feuchtgebieten" Foundation. To this end, a further 100,000 hectares of land are to be given protected status during the five-year project period. We were able to chalk up our first successes last year.



Pavel Pinchuk is ringing a wood sandpiper before releasing it again.

Areas of high nature conservation value were defined in the first step of expanding the existing protected areas and in designating new ones. This required extensive biological field work. Many species that are rare or even extinct elsewhere in Europe can be found in the vast forests and wetlands of Polesia. These include the aquatic warbler, the lungwort, and what is probably the most magnificent European orchid, the yellow lady's slipper. To date, 700 sites have been identified where protected animal and plant species naturally occur. The APB and USPB are currently preparing applications to place these areas under legal protection.

A new national park was designated in Ukraine in the very first months of the *Polesia – Wilderness without Borders* project. The Nobel National Park, named for the largest lake in the Ukrainian part of Polesia, covers 25,000 hectares. Together with the administrations of the protected area, the FZS and USPB have now drawn up management plans for this area and six others. These will form the strategic basis for their protection.

INTERNATIONAL RECOGNITION FOR POLESIA

Last year, our Ukrainian colleagues identified 163,000 hectares of valuable natural areas, and are currently applying to incorporate these into the Emerald Network (part of the Bern Convention). Old forests have also been mapped in the Ukrainian part of Polesia. To date, the experts have been able to classify 1,400 hectares as "forest of high nature conservation value." The state forestry administration has agreed to grant protected status to almost 70 percent of these forest areas.

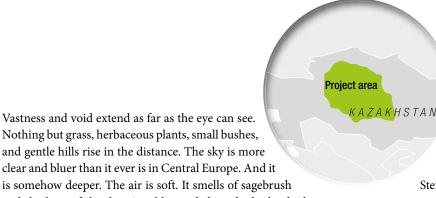
In 2019, our Ukrainian and Belarusian partner organizations, USPB and APB, also initiated a process for establishing a formal trans-boundary UNESCO biosphere reserve of one million hectares. The high nature conservation value of Polesia will, therefore, receive international recognition. The UNESCO nomination is supported by the ministries of the environment in both Belarus and Ukraine.

IN THE GOLDEN STEPPE

ALTYN DALA

The grasslands of the temperate zone belong to the least protected ecosystems on earth. But the steppe ecosystems are fragile. Only if wild ungulates such as saigas and kulans live in them, will they function properly. The herbivores graze the grasses and herbs, keep them short and thus create breeding grounds for many rare bird species.

The Kazakh saiga populations are recovering well from the dramatic decline in 2015.



Nothing but grass, herbaceous plants, small bushes, and gentle hills rise in the distance. The sky is more clear and bluer than it ever is in Central Europe. And it is somehow deeper. The air is soft. It smells of sagebrush and the heat of the day. A golden veil shrouds the land when the sun sinks in the Kazakh steppe and a warm wind blows away the bothersome mosquitoes.

The easternmost tip of Europe lies in Kazakhstan. The ninth largest country in the world is home to just 18.5 million inhabitants and has been a sovereign state since 1991. It is rich in natural resources - oil and gas, coal, iron ore, gold, uranium and zinc - and even richer in natural wonders. There are huge deserts, semi-deserts and steppes ideal habitats for steppe wolves, jackals, marmots, little bustards, black vultures, Przewalski horses, wild asses (kulans) and saiga antelopes.

The end of the Soviet Union marked the start of a number of difficult years for Kazakhstan. The once strictly regulated shooting quotas were abolished and people hunted saigas out of economic necessity. There was great demand for saiga meat, and the horns of the males could be sold for money. They are still used today in traditional medicine in Southeast Asia where they are ground into powder or other forms. It is estimated that about one million saiga antelopes were still living in the Kazakh grasslands in the 1990s. However, their numbers then shrank by more than 95 percent within just ten years between 1993 and 2003. The kulans, on the other hand, had long since become extinct. The last wild ass was shot in Kazakhstan around 1950.

THE FZS MISSION

FZS has been working in Kazakhstan since 2002 to preserve the saigas and their habitat - the grasslands of the temperate zone and one of the least protected ecosystems on earth. The Altyn Dala Conservation Initiative (ADCI) was founded in 2005, a comprehensive steppe conservation project that has been led by the German geoecologist, Steffen Zuther, for more than twelve years. Besides the Kazakhbased Association for the Conservation of Biodiversity of Kazakhstan (ACBK) and FZS, other partners which are involved in the joint international Altyn Dala Conservation Initiative project include

Fauna & Flora International and the Royal Society for the Protection of Birds (RSPB). The aim of the initiative is to protect and restore the steppe and semi-desert ecosystems of central Kazakhstan. Steffen Zuther and his colleagues from ACBK operate in

an area covering 75 million hectares, which is more than twice the size of Germany.

There are many different tasks to perform in this huge project area: the ADCI team is responsible for securing the protected areas and training the rangers. The staff carry out animal counts from the air, nowadays also using drones, and they conduct environmental outreach work in the villages. They collect research data, for example on the migratory behavior of saigas and wolves. Every May, when the saiga females calve, the calf monitoring program begins. That's the cue for a team of project staff and national and international scientists to head out into the steppe to monitor the calving and to count, weigh, and tag the newborn saiga antelopes.

A meticulously planned multi-year resettlement project, overseen by the ADCI, was launched in 2017. It has resulted in the return of a number of kulans to the central Kazakh steppe. Steppe ecosystems can only function if wild, hoofed animals such as saigas and kulans live there. The herbivores graze the grasses and herbaceous plants, keeping them short and thus creating breeding grounds for many rare bird species such as the sociable lapwing and the white-winged lark. The grazing wild animals also spread seeds and trample these into the upper soil layer. The saigas, the only larger hoofed animal species remaining in the steppe, cannot do this alone. As so-called selectors, they are very choosy: they eat only the tastiest parts of the steppe plants, leaving the rest, especially hard grasses, untouched. These in turn are the favorite food of the kulans. In the coming years, kulans from the two stable populations in the south of the country will be resettled to establish a new population. The project staff monitor the animals using transmitter collars.

"THERE HAVEN'T BEEN THIS MANY SAIGAS IN KAZAKHSTAN FOR 20 YEARS!"

The German geoecologist Steffen Zuther has headed the Altyn Dala Conservation Initiative (ADCI) since 2005.

Mr Zuther, what were the greatest successes of the Altyn Dala Conservation Initiative in 2019?

Steffen Zuther: The results of the saiga counts in 2019 saw major growth in all three Kazakh saiga populations: the Betpak-Dala, Ustyurt and Ural populations. The count we carried out in April 2019 showed there are about 334,400 saiga antelopes in these three populations. There haven't been this many saigas in Kazakhstan for 20 years! I'm so pleased about this because it shows that we're on the right track. The Ustyurt population, in particular, which the state authorities had more or less given up on, has been developing really well since we boosted the number of state rangers there with a team of ADCI rangers. The team has been out there every month since 2017, carrying out monitoring, environmental education and patrols.

What other advances in the project were there in 2019?

We introduced SMART monitoring software in 2019. International experts came to Kazakhstan to train the ACBK staff and state rangers. And I have to say, it's been a great success so far. The rangers like using SMART in their daily work, which is a great help when it comes to collecting, storing and evaluating data. We were also able to acquire a professional drone which we used for a number of counts in 2019. We're still in the test phase, but the application has worked well so far.

What advantages are there to using a drone instead of an aircraft for counting?

It drastically reduces the costs of the counts. In the past the Kazakh state had to spend vast sums of money to record the saiga numbers every year. In fact, it's also the only country with saigas that does this. As a result, we now have very sound data on how the numbers are developing. But the populations have recently become so large that we reached our limits with the existing methods. Soon we'll have to switch to purely photographic techniques taking pictures from higher altitudes at set intervals. This means that we "sample" the density of the saigas and use this as the basis for estimating the total number. Drones are ideally suited for this purpose. And they also reduce the number of man-hours involved.

What challenges did the ADCI face in 2019?

Resettling the kulans proved more difficult than we expected. Even capturing the animals in the state-owned Barsa Kelmes nature reserve in the south and bringing them to central Kazakhstan proved surprisingly challenging. Some kulans jumped back out of the two-meter high enclosure that was thought to be too high for them to escape. In addition, the long journey by truck was arduous. Based on observations and data from the transmission collars we know that the animals we have resettled are doing well so far, except for one case of poaching.

Is poaching an issue?

Yes. Saiga poaching might have decreased, but it remains a problem. And the rangers who are supposed to protect the saigas are now being targeted themselves by the poachers. In 2019, two state rangers were killed while out on patrol, and this year a ranger was killed in a car accident while chasing poachers. These cases are saddening and they cause outrage – both at the political level and among the general population. There are calls for changes in the law to punish crimes against wild animals more severely.

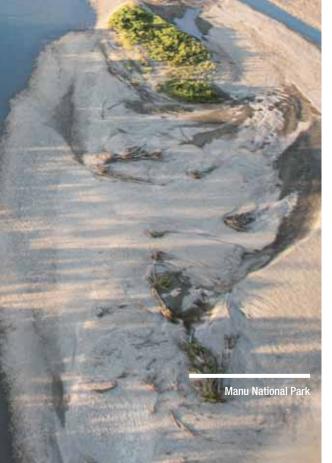
Steffen Zuther

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The FZS Peru program aims to protect four major regions containing a range of very different protected areas. What they have in common, however, is that they all preserve the country's legendary biodiversity and thus also the indigenous communities' very means of support.



"Strategically, our Andes-to-Amazon nature conservation program focuses on four large and species-rich landscapes, each of which includes at least one governmental conservation area," explains Hauke Hoops, head of the FZS Peru program. In the north of the country is the Putumayo landscape, including the Yaguas National Park and the planned Putumayo Reserva Comunal, where there is cross-border cooperation with protected areas in Colombia. In south-eastern Peru is the Manu landscape, which includes the Manu National Park and numerous adjacent protected areas. At the heart of this is the Manu, which is famed for its biodiversity and extends across several ecoregions from the heights of the Andes down to the Amazon lowlands. Next to Manu is the Purus landscape, containing the Alto-Purus National Park as well as communal and indigenous protected areas. Alto Purus is one of the most important protected areas in Peru due to its immense size and the vast tropical forests. The Purus landscape with its five protected areas is a little larger than Switzerland. The fourth landscape in which FZS is active is Bahuaja-Sonene-Tambopata, including the Bahuaja-Sonene National Park and the Tambopata National Reserve, which is popular with national and international tourists alike. There are also future plans for increased cooperation with the Madidi National Park in Bolivia.

These landscapes contain both biological and cultural treasures. They comprise a gigantic 10 million hectares of tropical forest, which is home to thousands of animal and plant species. The indigenous peoples, who still live in voluntary isolation under special protection in the rainforests in and around the Manu and Alto Purus national parks, can be described as unique on earth. The landscapes overseen by FZS are also home to various ethnic groups, including the Matsiguenka, Harakmbut, Ese Eja, Bora, Yine and Huni Kuin.

CLOSE COOPERATION WITH PARK AUTHORITIES

In Peru, FZS works closely with governmental authorities as well as with NGO partners and local communities. In all four landscapes, we provide varying degrees of personnel and financial support for the control and surveillance of protected areas, and also for wildlife monitoring, environmental education and projects dedicated to the sustainable use of natural resources.

Hauke Hoops explains what it means in practice to fortify a protected area against threats: "Last year, FZS-Peru provided considerable support to the protected areas authority SERNANP for the construction and equipping of control posts in Yaguas and Bahuaja-Sonene. The remote location represented a complex logistical challenge. However, these control posts mean that SERNANP park rangers are now able to hinder or prevent access to the protected areas for illegal gold miners." We also support further training for employees of the SERNANP (*Servicio Nacional de Areas Naturales Protegidas por el Estado*) park authority in the handling of drones and in photogrammetry (image measurement), which also help improve the effectiveness of the park protection. Additional and better aerial surveillance and satellite image analysis have made it possible to detect the areas where illegal gold mining is taking place much faster, for example near the Manu and Bahuaja-Sonene National Parks.

Illegal gold mining from river sediments has reached alarming dimensions. The global economic crisis caused by the corona virus and the resulting rise in the price of gold is likely to further exacerbate this problem. However, 2019 saw the first turning point in the fight against illegal gold mining in the Madre de Dios region. *Operación Mercurio* was the largest inter-agency initiative to eradicate the notorious gold mining area of La Pampa.

EDUCATION FOR SUSTAINABLE DEVELOPMENT

Promoting understanding of nature conservation and highlighting ways in which local communities can benefit from the protected areas on a sustainable and long-term basis are key aspects of our work in Peru, as in all other FZS project countries. Kevin Ibañez, FZS coordinator in the Bahuaja-Sonene National Park, for example, has developed a utilization approach that allows local communities to collect the eggs of river turtles for food without endangering the protection of the species or the turtle population.

Cooperation with the Matsiguenka families in Manu National Park has also improved considerably. The boarding school run by FZS in Boca Manu has a policy of bilingual, intercultural education which gives the children the opportunity to complete their secondary schooling. "Twenty young people were able to attend secondary school in Boca Manu last year thanks to the boarding school," says Hauke Hoops. Cooperation with the Nopoki Campus of the *Universidad Católica Sedes Sapientiae* even allowed a number of pupils to start a college education. Until now, indigenous young people have usually been barred from higher education due to cultural and language barriers. This is now possible thanks to the partnership between FZS and Nopoki Campus.

The first four young Matsiguenka women were accepted at the university in 2018, and earned the admiration of their families when they visited their home village during the holidays. Their example is setting a precedent: four more young adults applied to the university in 2019, and 12 applications have already been received in 2020. And so the first generation of Matsiguenka students is already off to a flying start.

PROTECTION OF THE YAGUAS NATIONAL PARK

PROJECT START: 2015 PROJECT AREA: 8,700 km²

YAGUAS

THE GUARDIANS OF THE FOREST

Yaguas National Park

The majority of the indigenous people see the Yaguas National Park as a stronghold against illegal gold miners and loggers. The Park protects the natural resources on which they depend. This is why the communities and the park authority have become allies for nature conservation.

Liz Chicaje Churay is a bundle of energy - and at the same time a quiet and reserved woman. However, when she starts to talk about Yaguas, it is difficult to stop her. Yaguas is her and her family's home. Liz belongs to the Bora people, an indigenous community that lives in the rainforest in northern Peru, close to the country's youngest national park which was created in 2018: the Yaguas National Park. "We, the indigenous people, are the guardians of Yaguas," says Liz Chicaje Churay. "And we need the national park to protect the vast rainforests and the rivers from the illegal gold seekers, loggers and all the others who want to profit from the natural resources of our forest." Yaguas is 8,700 square kilometers in size and is home to thousands of species, including river dolphins, giant otters, manatees and jaguars. The rivers of the park are the breeding grounds of the more than 300 fish species that the communities outside the park live on.

The fact that Yaguas became a national park is due in no small part to Liz Chicaje Churay, a local resident and mother to five children. As the chairperson of the FECONA indigenous representation organization, she was instrumental in pushing forward the process that eventually gave Yaguas national park its status by helping to convince 23 of the 29 communities around Yaguas of the importance of the national park. In January 2019, she was awarded the Franco-German Prize for Human Rights and the Rule of Law in Lima by the German Ambassador Stefan Herzberg, and the French Ambassador Antoine Grassin.

In the summer of 2019, Yaguas entered a new phase. This involved the development of a master plan for the national park, plus the expansion and equipping of key control posts to prevent gold miners from returning to the park. Together with the indigenous associations, great progress was also made in designating a communal protected area along the Putumayo River north of the park. The national park that protects their resources is one thing. But the communities need even more to protect their land from illegal goldminers and loggers: a so-called Reserva Comunal. The protected status which this confers permits the sustainable use of resources such as fish, fruit and plants, but prohibits gold mining and commercial logging. The benefits of the Reserva Comunal are therefore two-fold: it allows the indigenous communities to pursue their way of life in safety, and it acts as an additional buffer to the north of the park.

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TURTLES AS CONSERVATION AMBASSADORS

On the Caquetá River, the monitoring of river turtles contributes to a regulated use of the animals and their eggs and helps to protect the area. The project has become a successful model of cooperation between the protected area authority and the indigenous population.

COLOMBIA

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Chiribiquete National Park National Park

PROTECTION OF THE CHIRIBIQUETE NATIONAL PARK AND ITS SURROUNDINGS

PROJECT AREA: 71,300 km²

PROJECT START: 2014



When night falls on the Caquetá River, Ana Lucía Bermúdez opens her bag. Forty small turtles tumble out onto the sand and scurry as fast as they can to the water. Their chances of survival are not so bad and perhaps some day, the tiny creatures will return as adult river turtles to the beach in the Cahuinarí National Park. This location, in Colombia's Amazon rainforest, is where Ana Lucía Bermúdez carries out work for FZS. She is focusing on the South American river turtle (*Podocnemis expansa*), the largest freshwater turtle in Latin America. Ana Lucía Bermúdez is being helped by people in the villages along the Caquetá River, where the turtles lay their eggs on the wide sandy beaches and sandbanks.

The Cahuinarí National Park was established in 1987 to protect the turtles, or *charapas*, as they are known there, and their habitat. In the past, the turtles were subject to widespread exploitation: their eggs were collected and the adult animals were caught mainly for their fat. The park was supposed to protect the *charapas*, but no concrete plans were drawn up until 2014.

The Cahuinarí National Park overlaps with the ancestral territory of the Miraña Bora indigenous people, who are members of the indigenous organization PANI. Six years ago, FZS joined forces with PANI and the *Parques Nacionales Naturales de Colombia* (PNNC) to develop a strategy for exploiting the turtles without endangering their numbers permanently.

The indigenous families participating in the FZS turtle program take turns monitoring the beaches, identifying and checking the nests, and collecting data on the charapas. In order to do this, they take turns in 22-day shifts. Ana Lucía Bermúdez evaluates the resulting data. "Our goal is to preserve the turtles for the indigenous communities. After all, the turtle eggs are both a crucial part of their traditional diet and an important and sacred aspect of the indigenous culture and history," she explains. But there is more to this project. "The turtle is an umbrella species, which means that if we protect it, we protect the entire habitat and many other species, too." The main goal of the turtle project in the lower Caquetá region is to involve the indigenous communities in protecting the area. In a country so fraught with conflict and a security situation that has

once again worsened, it is more important than ever for nature conservation to have local allies. Many families along the Caquetá are enthusiastic about the project and are keen to know more about the life of the *charapas*. Those who wish can now even submit their own small research projects.

The FZS turtle program completed its fifth year in Colombia; evaluation of data from this time has yielded several findings. Animals that were marked with fluorescent paint in 2018 were found in river regions 420 to 600 kilometers away from their original marking site - an astonishing journey. In addition, turtles that had been marked the year before, returned to their original beach in 2019. As a result, it is evident that the turtles need much more space than was previously assumed. For Ana Lucía Bermúdez, such findings provide affirmation of the work she performs together with the local population. And they offer a scientific basis for sustainable use concepts with the villages along the Caquetá River from Chiribiquete National Park to Brazil. The collection of data on the use of turtle eggs is to be further improved in cooperation with the PANI indigenous association. This is because some families evidently fear that they would be punished if they stated honestly how many turtle eggs they consumed. But only precise knowledge of what and how much is being consumed can improve the protection of the female turtles that settle near the villages to lay their eggs during the flooding season.

FZS has supported the Colombian PNNC protected area authority and indigenous associations since 2014 in protecting the Caquetá River landscape. Esperanza Leal has been FZS project manager since 2017; she assists the protected area authority in developing and implementing a management plan for the Serranía de Chiribiquete National Park, a UNESCO World Heritage Site. In addition to turtle monitoring, FZS helps equip and furnish control posts and research stations in the Serranía de Chiribiquete, Cahuinarí, Yaigojé – Apaporis, Amacayacu and Río Puré national parks in the Colombian Amazon basin.

Ana Lucía Bermúdez is releasing young turtles that hatched in the project's care.

"NATURE CONSERVATION IN COLOMBIA HAS ALWAYS BEEN A GREAT CHALLENGE"

Ms Leal, the Chiribiquete National Park was considerably expanded two years ago. Has this actually improved protection of the area?

Esperanza Leal: The addition of 1.5 million hectares meant that a total of 4.3 million hectares are now protected in the national park. This is a great success, but unfortunately it has not stopped all the illegal activity within the park – about 5,000 hectares in the north have already been cleared. OK, this is actually quite small in relation to the total size, but we fear that the deforestation will continue.

How do the park authority and FZS cooperate?

We cooperate closely with the protected area authority PNNC, we provide technical support and offer the park authority both financial and logistical assistance, for example with fuel and equipment or by developing a management plan for Chiribiquete. FZS also works in the Cahuinarí National Park, where we monitor river turtles along the Caquetá River together with the indigenous villages. Incidentally the continuous presence of the villagers has created a kind of control system for the general protection of the region from illegal intruders.

The price of gold has soared to a new all-time high. Is there alluvial gold mining in the Colombian Amazon rainforest – as we've also seen in Peru?

Unfortunately, yes. It has not yet reached the same proportions as in Madre de Dios in Peru, for example, but it is a real threat. Anyone with the relevant know-how can build a suction dredger, and there is no monitoring of mercury or gasoline purchases. Alluvial gold mining using mercury is actually prohibited in Colombia, yet it still goes on, especially in the border areas with Brazil and Peru. Recently, dragas - rafts with suction dredgers on them - were brought into the Rio Puré National Park from Brazil. This is a real problem, because indigenous groups live there in isolation. FZS monitors these illegal activities using satellite image analysis and informs the authorities. But this area is so remote and there are simply not enough resources to intervene.

Are you facing any other challenges in your project areas?

Nature conservation in Colombia has always been a great challenge. The peace process with the rebels in the Amazon region is giving rise to various illegal activities and conflicts over land. In protected areas, roads are being built, oil palms and coca are being planted, and cattle are being grazed. This is having a powerful adverse effect on the protected areas. The security situation is unstable as the illegal activities are controlled by armed rebel groups. This represents a grave risk for the park employees in the Amazon region. And of course the corona pandemic is significantly slowing down work out in the field. There are no transport facilities and no access to a number of indigenous areas in the park. Communication is difficult, surveillance is now greatly reduced. And there is a risk of indigenous groups becoming infected with the virus - which would be a catastrophe.

Esperanza Leal heads FZS' Colombia Program. **KANUKU MOUNTAINS**

INVENTORY **BY CAMERA**

Camera traps provide information on wildlife in the rainforest.

Many rainforest animals are shy and rarely seen. This applies, too, for the wildlife in the huge, uninhabited Kanuku Mountains Protected Area in southern Guyana. The mountains tower up to 1,000 meters, while there are large numbers of caves, rivers and streams in the lowlands beneath - home to a rich and largely unexplored world of plants and animals. In such remote rainforests, cameras that are triggered automatically by movement or heat are an excellent way of obtaining an overview of the local wildlife. With a suitable number of camera traps set up along transects to take and store images over many months, it is also possible to estimate the population density of the photographed species. Pictures showing unique markings or other distinguishing features can even be used to identify individual animals. The first data collected by camera traps along the Rewa, Kwitaro and Rupununi rivers in 2018 and 2019 has now been assessed, with the results indicating a large population of jaguars in the Kanuku Mountains. The occurrence of wild animals, especially jaguars, will be investigated in greater detail over the next two years through largescale and systematic monitoring of representative sectors from the entire protected area. In 2019, three new rangers were hired for the Kanuku Mountains, bringing the number in the protected area team to eight. FZS trained them in the use of camera traps and GPS devices, and purchased additional equipment for GUYANA effective monitoring.

Kanuku Mountains Protected Area

BUKIT TIGAPULUH

A GREEN SANCTUARY FOR RED APES AND GRAY GIANTS

Bukit Tigapuluh National Park

SUMPTRE

In the midst of industrial-scale monocultures, open-cast mines and rubber and palm oil plantations created by slash-and-burn clearing, there is a green patch of lowland rainforest which stands out like an island. This is Bukit Tigapuluh, one of the last wilderness areas in Sumatra and a sanctuary for a large number of very rare animal species. There are also small groups of indigenous people who still live in, and depend on, the forest. Dr. Alexander Moßbrucker reports from Sumatra.

> Few places like this still exist in densely populated Southeast Asia. What makes Bukit Tigapuluh so extraordinary, however, are the Sumatran orang-utans which have been reintroduced over the last two decades. These red-brown great apes are threatened with extinction. Elsewhere they are only found in the north of the island - and then only in small numbers. Closely related to us, they are sometimes called "forest people" and anyone who spends time with them will know why. Their ability to solve challenging problems, to understand and learn complex processes and other cognitively demanding tasks, put them on a similar intellectual level to young human children. And just like them, the little orang-utans have much to learn usually from their mother with whom they spend the first years of their lives.

> This is not a problem in the wild, but FZS Program Manager, Dr. Peter Pratje, faced many challenges when he first started preparing orphaned orang-utans for a life outside captivity at the turn of the millennium. The fuzzy bundles of energy, often kept in private homes in chains or in cages far too small, were to be given a better life. The efforts would also help to preserve the species. Pratje wanted to establish a "backup" population, a protected group away from the main orang-utan habitat in the north of Sumatra.

THE LONG ROAD TO SUCCESS

Peter Pratje's project has grown into an impressive program over the years. FZS currently operates two field stations in Bukit Tigapuluh where the young orangutans are first trained and then monitored after release. If necessary, they are also offered further support. In 2019, the team released the 173rd orang-utan into

Sumatran orang-utan in Bukit Tigapuluh





Several orang-utan mothers and their offspring are being regularly observed around the field stations. A mother-childstudy has been launched to evaluate the reproductive success.

Elephant monitoring is an important component of the program. At this time seven elephants are equipped with GPS collars in order to help us monitor their movements and to minimize conflicts with farmers. At least one elephant per group wears a collar which means we can monitor a total of 130 animals.

the forest. Growing signs of the venture's success are emerging: the resettled population is now reproducing independently in the wild. However, we had to wait quite some time for this because orang-utans only reproduce very slowly when left to their own devices. It takes about 15 years until a female orang-utan gives birth to her first young. The next one then arrives eight or nine years later. This is because orang-utans take intensive and exclusive care of their offspring over a long period.

For some time now, our staff have been observing increasing numbers of young mothers with newborn offspring around the release station. A small research project was launched in 2019 to investigate motheroffspring behavior in detail. This work is as interesting as it is important: among other things it aims to assess how well the orang-utans, which have been released into the wild (most of which grew up in captivity), are able to look after offspring which are born in the wild. They appear to be coping admirably, as most of the babies are doing well so far.

Unlike orang-utans, the rare Sumatran elephants and Sumatran tigers have never disappeared from Bukit Tigapuluh. The FZS Wildlife Protection Unit (WPU) is working hard to ensure that this remains so. Together with the rangers of the national park and the BKSDA Jambi (*Balai Konservasi Sumber Daya Alam*) nature conservation authority, the 25 WPU community rangers go out on patrol every month – on foot and on cross-country motorcycle. They track down and investigate cases of poaching and illegal logging, and pass the information on to the relevant authorities. They also take inventories of key species. The rangers work closely with the inhabitants of the villages bordering the national park to defuse any conflicts between humans and wildlife that inevitably arise at such boundaries between forest and agricultural land.

FARMERS AND ELEPHANTS - ENDLESS POTENTIAL FOR CONFLICT

If conflict does arise, elephants are generally involved. In 2019, the WPU was called upon around 230 times to protect both the elephants and the farmers' fields. In cooperation with more than 500 farmers, the rangers took action in seven different villages throughout the area. A number of particularly challenging situations arose in 2019 due to the migration of young bull elephants. Several of them left the forest on a journey which took them through various densely populated areas. This is natural elephant behavior. It is known as "dispersal" and serves to prevent inbreeding. The fact that there are now so many of these young bulls is a healthy sign because it means that there are enough offspring and that ivory poaching is well under control within the WPU patrol area. However, it causes problems since there is no longer any suitable habitat for them within a reachable distance of Bukit Tigapuluh. We had to join forces with BKSDA Jambi and other partners in 2019 to catch three young bulls and prevent accidents. The elephants were tagged with GPS transmitters for further monitoring and released into the forest south of the national park.



Caught on camera: After more than ten years we and a number of partners conducted another tiger survey. Camera trap images show tiger offspring in the park's buffer zone. The estimated size of the population in Bukit Tigapuluh is 35 adult tigers.

This southern area is especially important for elephants because the terrain in the park itself is too steep for the gray giants. Fortunately, protection efforts for the area were redoubled in 2019. A *Kawasan Ekosistem Esentiel* (KEE) – or "essential ecosystem" – is to be created here. This includes the wildlife and forest protection areas of an adjacent rubber plantation and the *PT Alam Bukit Tigapuluh* (ABT) Ecosystem Restoration Concession (ERC), which is actively supported by FZS. Thanks in part to FZS' longstanding efforts, the planned KEE has become a prestige project of the local nature conservation authority. The area is not only home to the largest elephant population in central Sumatra (almost 130 animals) and the main reintroduction station for orang-utans, but it also acts as an important buffer for the park.

WORKING WITH THE LOCAL POPULATION TO PROTECT THE FOREST

There is also an area in the eastern part of the region that is not directly protected by the national park: Forest Management Unit 16, including an orang-utan sanctuary, co-initiated by FZS. The aim here is to preserve the last remaining forest around the FZS Danau Alo station by conducting ranger patrols in cooperation with the forestry authority. It is an important habitat for tigers, orang-utans and many other wild animals.



The *Wildlife Protection Unit* works in difficult terrain. Nevertheless, patrols are carried out continuously to reduce poaching and habitat destruction. Up to eight ranger teams are deployed in the area every month. Of course, none of this is possible without the support of the local population. For this reason, in 2019, we redoubled our efforts to find sustainable alternatives to palm oil and rubber monocultures for the local farmers to grow. We established and expanded the "Social Forestry Training Center," a community and practical training center. The goal is to create a diverse and species-rich village forest from which people can live without destroying the fragile ecosystem. A form of forestry that minimizes conflict with the local wildlife populations. In collaboration with the villagers, this concept is to be gradually expanded in order to reforest cleared and burnt areas of forest throughout the region.

Unfortunately, there are more than enough burnt areas at the moment. The extreme weather in the summer of 2019 ushered in a prolonged dry season. Devastating fires – often set deliberately for illegal fire clearance – were the result. Even greater levels of support were then needed for the ABT Ecosystem Restoration Conces-

sion and the Forest Management Unit 16, which had to cope with large numbers of fires as buffers of the national park. The core areas, at least, could be saved from the worst effects. Large-scale reforestation is planned in the next few years. This will allow the areas which were lost to be restored to their natural state as quickly as possible. If the local population and wildlife such as the orang-utans, tigers and elephants are to have any real chance of survival in the future, Bukit Tigapuluh must remain a cohesive forest. There is no Plan B here, and we cannot afford to let our guard drop in the future.



Herry Trijoko works for the Mobile Education Unit and teaches the students of Muara Sekalo south of the National Park about orang-utans.

GETTING THE MESSAGE ACROSS

The Bana are proud of their region's biodiversity – and keen to protect it

Kon Ka Kinh National Park

For the past three years, the FZS team in Vietnam has been working with the indigenous Bana communities in the south of the 42,000 hectare Kon Ka Kinh National Park. FZS has been helping with conservation area management by supporting the work of the rangers and assisting with wildlife monitoring. "We're increasingly seeing just how proud the Bana are of their region, their culture and their natural assets," says FZS Project Leader Dr. Ha Thang Long, describing the cooperation. "The environmental education programs we run in the villages and schools complement the traditional knowledge of the Bana about nature, and encourage them to protect their wildlife." These programs include helping the Bana to identify and protect endangered plant and animal species. The FZS team also organizes discovery tours into Kon Ka Kinh National Park, as well as workshops and talks on protecting the native flora and fauna.

In 2019, the efforts were so successful that, for the first time, the Bana communities were inspired to launch their own activities, such as the regular collection of garbage in the villages of Hiar and DeKgieng. Wildlife protection is now increasingly a topic of conversation in the village, as the FZS team has noted during its visits. More and more Bana are realizing just how important it is that their children and grandchildren get to experience wild animals in Vietnam's forests in the future. Some are volunteering for patrols, and last year 120 Bana signed a declaration of intent to stop the hunting of apes. Dinh Duong, leader of the DeKgieng village, called Dr. Ha Thang Long at the end of last year to report that no monkeys had been hunted by villagers in 2019. If this new tradition takes root, there are good prospects for the long-term protection of Kon Ka Kinh National Park in the central highlands of Vietnam.

VIETNAM

In Tanzania and Zambia Community Conservation Banks (COCOBAs) have become a successful tool in nature conservation.

FINANCIAL REPORT 2019

Frankfurt Zoological Society and "Hilfe für die bedrohte Tierwelt" Foundation

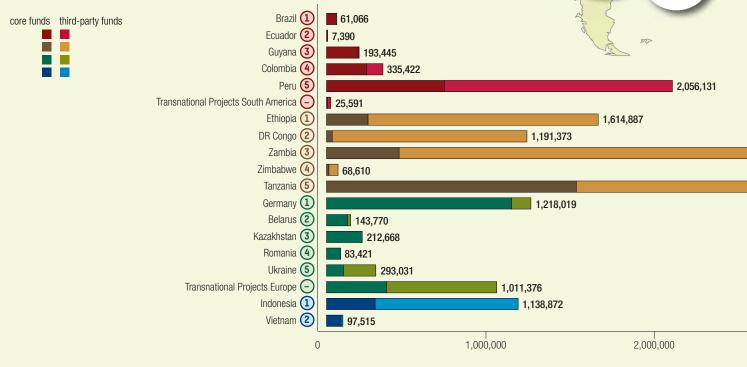
18.5 MILLION EUROS 29 PROJECTS & PROGRAMS 18 COUNTRIES

FZS' focus lies on the protection of large wilderness areas such as grasslands, forests, wetlands and mountain areas. Geographically we concentrate on East Africa (e.g. Serengeti, Tanzania), South America (e.g. Manu, Peru), Eastern Europe (e.g. Altyn Dala, Kazakhstan) and Southeast Asia (e.g. Bukit Tigapuluh, Indonesia).

We distribute our annual conservation expenditures according to our long-term conservation strategy. They comprise of core funds (e.g. donations) and third-party funds (e.g. government grants), that is project specific funds from public donors, foundations or organizations.

DISTRIBUTION 2019 OF EXPENDITURES BY COUNTRY

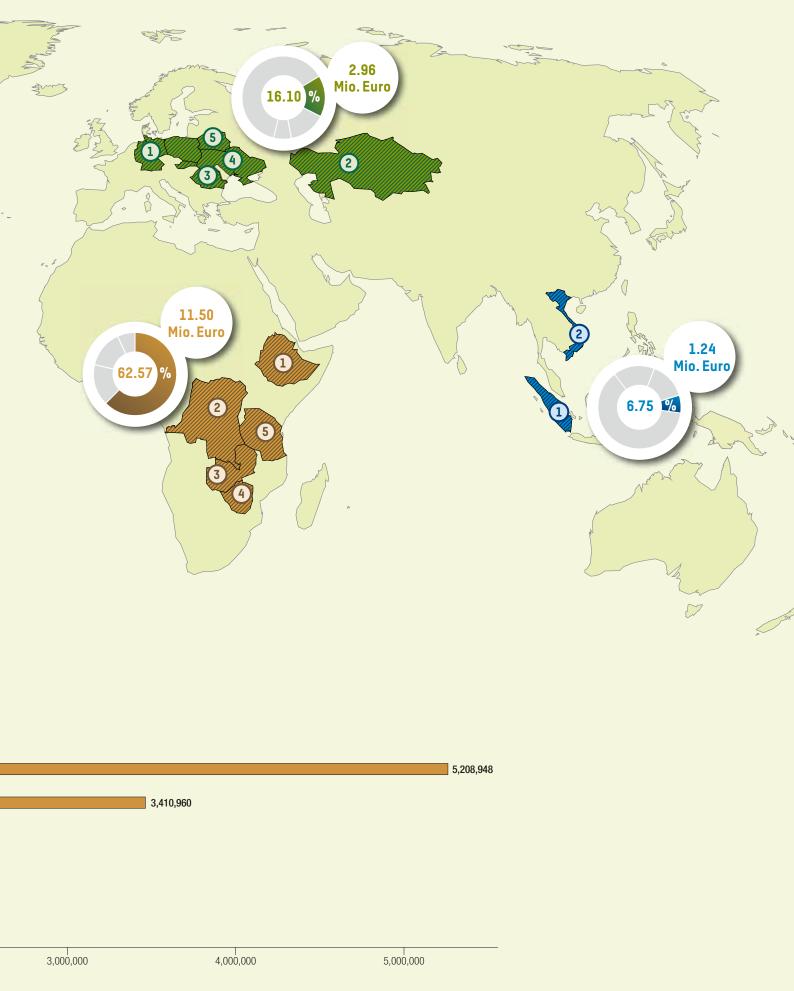
Distribution of FZS conservation expenditures in 2019 (core funds and third-party funds without administrative costs) in Euro.



14.58

2.68

Mio. Euro



FINANCIAL REPORT OF FZS

ACCOUNTING AND VALUATION METHODS

The annual financial statements as per 31 December 2019 have been prepared according to the provisions of section 264 et seq. of the German Commercial Code (HGB) and meet the accounting requirements set out in section 267 subsection 2 HGB for a medium-sized corporation. The profit and loss account was prepared in accordance with the commercial law nature-of-expense method according to section 275 subsection 2 HGB, taking into account the specific characteristics of the Society's expense and income presentation. The annual financial statements were audited and approved by W+ST Wirtschaftsprüfung GmbH without reservations.

In 2019, the FZS projects in Peru, Colombia, Indonesia, Vietnam, Tanzania, the Democratic Republic of Congo and Zambia were audited by Baker Tilly International, the project in Zimbabwe by Ernst & Young and that in Ethiopia by Ephrem Melaku & Co. The expenses of individual (and small-scale) projects in Europe and South America were audited internally in Frankfurt by the Finance Department and spot checks were made by the auditing company W+ST Wirtschaftsprüfung GmbH. Additional independent, project-specific audits have been conducted for individual KfW and GIZ-funded third-party projects, e.g. in Tanzania, Zambia, Ethiopia and Indonesia.

The same financial software (ABACUS) and double-entry bookkeeping methods are used for all FZS projects in Africa, Vietnam, Indonesia, Colombia and Peru as in the Frankfurt headquarters. This makes group consolidation of international projects with the German headquarters considerably easier and facilitates very high transparency levels in the presentation of the financial flows. It also further strengthens the internal control system for the proper disbursement of donations, membership fees, civil penalties and thirdparty funds.

ASSETS in TEUR	2019	2018
FIXED ASSETS		
Intangible assets	0	4
Tangible assets	75	6,349
Financial assets	27,271	8,192
CURRENT ASSETS		
Receivables and other assets	3,929	3,371
Liquid assets	3,578	6,287
PREPAYMENTS AND ACCRUED INCOME	40	32
TOTAL	34,893	24,235

ASSETS

FIXED ASSETS

Intangible assets

The intangible assets are general software licenses and capitalized special developments for the ABACUS accounting system. On the one hand, write-downs reduce the value of these intangible assets over the course of the depreciation period, on the other hand, the value is increased by newly capitalized custom developments.

Tangible assets

There has been a significant reduction in the tangible assets. They amounted to EUR 0.08 million (previous year: EUR 6.35 million) at the end of 2019. Two pieces of real estate valued at EUR 2.04 million were handed over from estates to the "Hilfe für die bedrohte Tierwelt" Foundation. In addition, properties and farmland deriving from estates and not available for long-term use were sold. Smaller areas of nature conservation land in the FZS portfolio were written off because they no longer have the original purchase value due to land register encumbrances for nature conservation or intended nature conservation-related changes (e.g. rewetting). As the result of strategic internal reorientation, these will gradually be transferred to other conservation organizations.

Smaller real estate properties must be sold for administrative reasons. Larger properties will be handed over to the Foundation for long-term investment and to strengthen its finances. Continuous revenue from rental income is very important for nature conservation work, especially in view of the capital market risks and the current low interest rates. FZS and the Foundation have continued interest in obtaining larger contiguous residential properties for their investment portfolio with a view to further diversification.

Financial assets

The financial assets consist of shareholdings and securities. The amount invested in the financial markets increased in the balance sheet from EUR 8.19 million in 2018 to EUR 27.27 million at the end of 2019, mainly due to the investment of inheritances and the above-mentioned sale of fixed assets in the form of land at the end of 2019. The financial assets are mainly bundled in the organization's own master special fund, overseen by various asset managers in order to reduce administrative costs and to optimize the risk-return parameters. The securities are carried at cost or using the lower-of-cost-or-market principle. This also means that any price increases

of shares or bonds that exceed the purchase costs have no effect on the balance sheet. Only when the securities are sold, or when the securities are written down (if the value at sale is below the purchase cost), does the result have an impact on the profit and loss account.

CURRENT ASSETS

Receivables and other assets

In receivables and other assets, the main item of EUR 3.93 million is made up of funds from project partners and third-party granting institutions. The value of these assets is currently EUR 1.93 million (previous year: total EUR 3.37 million; EUR 1.38 million from project partners and third-party granting institutions). This level of receivables vis-à-vis project partners is mainly due to funds unspent during the financial year, or FZS making advance payments for thirdparty granting agencies. These prepayments are repaid on a regular basis or at the conclusion of the funded project. Receivables from estates and bequests currently stand at EUR 0.08 million (previous year: EUR 0.40 million). These receivables arise from estates that are still being wound up, the existence and recoverability of which, however, must be evaluated on the balance sheet date.

Liquid assets

The cash and bank balances of FZS in Frankfurt, Vietnam, Indonesia, Peru, Colombia, and the five African project regions amounted to EUR 3.58 million (previous year: EUR 6.29 million), of which EUR 2.12 million is assigned to the Frankfurt office. EUR 1.81 million is held at banks in the project regions and in Frankfurt in foreign currencies, EUR 1.09 million of which is in US dollars. FZS' liquid assets are held in 14 different currencies. Surplus liquidity is parked in overnight deposit accounts or deposited long-term in the master special fund of FZS.

PREPAYMENTS AND ACCRUED INCOME

Accrued income encompasses costs for individual financial years such as insurance costs.

LIABILITIES

EQUITY

Capital and free reserves

The equity capital rose significantly from EUR 19.24 million to EUR 28.69 million. Within the equity capital, the Society's capital decreased by EUR 2.05 million to EUR 10.60 million (previous year: EUR 12.65 million). The background to this is the transfer of real estate in the amount of EUR 2.04 million to the "Hilfe für die bedrohte Tierwelt" Foundation. The free reserves and the funds carried forward rose through the high level of inheritance income to EUR 18.18 million (previous year: EUR 6.59 million). The additional funds from inheritances will be used for organizational and project development as well as risk reduction in the coming years.

PROVISIONS

Provisions amounted to EUR 0.77 million (previous year: EUR 0.64 million). Principal among these are provisions for the settlement of estates to the value of EUR 0.56 million.

LIABILITIES

Project funds for international projects

Project liabilities vis-a-vis third-party granting organizations were EUR 4.23 million (previous year: EUR 3.57 million). The total is mainly due to third-party funds which were unspent during the year under review which must be separately accounted for at year's end. Frequently, third-party payments are made in December for project activities that will take place the following year. We were also able to reduce liabilities for international projects last year.

Other liabilities

At EUR 1.20 million, other liabilities were higher than in the previous year (EUR 0.78 million). These consist of liabilities in the form of personnel costs, taxes, usufruct, etc.

LIABILITIES in TEUR	2019	2018
EQUITY		
Capital and free reserves	28,690	19,241
PROVISIONS	774	644
LIABILITIES		
Project funds	4,231	3,574
Other liabilities	1,198	776
TOTAL	34,893	24,235

STATEMENT OF INCOME

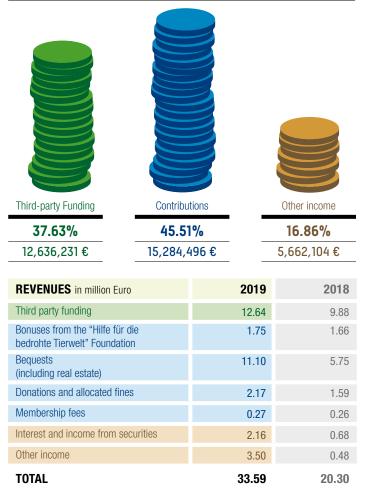
REVENUES

Revenues from third-parties and **funding grants** remain at a very high level. They amount to EUR 12.64 million (previous year: EUR 9.88 million).

In 2019, the **"Hilfe für die bedrohte Tierwelt"** Foundation contributed EUR 1.75 million to FZS (previous year: EUR 1.66 million at a free reserve ratio of 16 percent). The distribution also includes the regular donation from the Eleonore Beck Foundation of EUR 0.56 million.

The FZS continues to have a highly diversified revenue structure. Income from **inheritances and bequests** has remained at a very high level in recent years and was exceptionally high at EUR 11.10 million in 2019 (previous year: EUR 5.75 million). This income is due to a large

REVENUES



number of inheritances, but also to a handful of very large individual testamentary bequests.

Donations, sponsorship contributions and fines remain at a gratifyingly high level. At EUR 2.17 million, they not only matched the previous year's result (previous year: EUR 1.59 million) but even exceeded it thanks to some sizable individual donations.

Income from **membership fees** remained stable at EUR 0.27 million (previous year: EUR 0.26 million). The number of members increased slightly from 3,497 to 3,523 in 2019.

Interest and income from securities were modest due to the low interest rates and poor capital market performance. FZS has been investing in the Foundation's master special fund since 2019. The contribution of FZS' own assets at market value revealed FZS' valuation reserves. In addition, the losses from write-downs in 2018 were offset by the recovery of the stock market in 2019. A result of EUR 2.16 million (previous year: EUR 0.68 million) was achieved from interest and securities.

Other income of EUR 3.50 million (previous year: EUR 0.48 million) includes income from the sale of farmland (EUR 2.91 million) which FZS had received in inheritances.

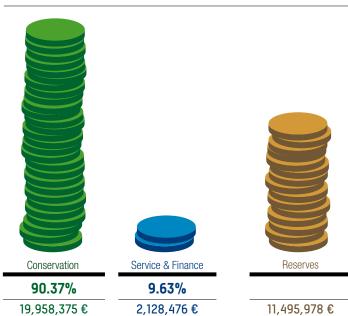
EXPENDITURES

Expenditure for conservation work in accordance with our statutes, as well as for project management and general administration of FZS, amounted to EUR 19.85 million (previous year: EUR 15.57 million), excluding reserves accumulation. Conservation project expenses amounted to EUR 18.50 million (previous year: EUR 14.22 million). As in the previous year, EUR 1.35 million was spent on project coordination and administration. Personnel costs amounting to EUR 1.10 million are a major component here. Apart from personnel costs, the largest items are general office expenses of EUR 39,000 and IT costs of EUR 26,000. Legal and consulting costs of EUR 20,000 were kept at a low level thanks to the use of experts and pro bono networks.

FZS gave EUR 0.11 million to the Frankfurt Zoo and the collaborative Conservation Ambassador Project (previous year: EUR 0.08 million). Communications and public relations including associated personnel costs amounted to EUR 0.35 million (previous year: EUR 0.32 million), with EUR 0.34 million for sponsor services and fundraising (previous year: EUR 0.34 million). Asset management, securities and exchange rate losses, accrued interest and other expenses amounted to EUR 1.44 million at the end of 2019 (previous year: EUR 1.62 million).

The result, mainly from the extraordinarily high inheritance income, is earmarked as funds carried forward for organization and project work development as well as for risk reduction, and will be released over the next few years. An additional EUR 11.5 million was allocated for this purpose in 2019.

EXPENDITURES



EXPENDITURES in million Euro	2019	2018
Conservation projects	18.50	14.22
Coordination of conservation program, Frankfurt headquarters	1.35	1.35
Support of Frankfurt Zoo/ conservation ambassadors	0.11	0.08
Communications and Public Relations	0.35	0.32
Fundraising and sponsor service	0.34	0.34
Asset management and other expenses	0.55	0.88
Write-downs on securities and fixed assets	0.89	0.74
RESERVES in million Euro	2019	2018
Accumulation of reserves	11.50	2.38
TOTAL	33.59	20.31

EXCERPT FROM THE CAPITAL INVESTMENT GUIDELINES OF FRANKFURT ZOOLOGICAL SOCIETY AND THE "HILFE FÜR DIE BEDROHTE TIERWELT" FOUNDATION

- No investment may conflict with the conservation mandate.
- Investments in gold, precious metals or other commodities, the extraction of which currently has a strong negative impact on the environment, are excluded.
- The assets may not be invested in companies which generate their principal revenue from arms, alcohol, tobacco, gambling, or genetic engineering. Also excluded are investments in corrupt and illiberal states in which human rights are not respected.
- Investments should only be made in certified bonds and money market instruments. Bonds and money market instruments without investment grade ratings are allowed only with the consent of the Foundation or of the Society.
- The investment currency is the euro. The currency risk is limited to a maximum of 30 percent of the total investment volume.

OPPORTUNITIES, RISKS, OUTLOOK

Frankfurt Zoological Society is financially robust and is in a position to make an important contribution to international nature conservation thanks to its support from private sponsors and its cooperation with public and institutional donors. The importance of our solid and diversified revenue structure has become especially evident during this challenging COVID-19 pandemic.

A number of highly exceptional inheritances were received in 2019. There was also strong support from members, donors and sponsors, who ensured that revenues remained stable. For a number of years now, we have successfully used our (largely flexible) core funds (private donations, membership and sponsorship fees and capital gains) to leverage third-party project funds from large institutional granting agencies. Further key sources of project funding include major donations, endowments and inheritances.

Nature conservation is an ongoing task, and FZS has a strong sense of commitment to the protected areas. That is why we must continue to emphasize sustainability and long-term financial security in our conservation work. This is a major challenge, especially given the uncertainty caused by the current COVID-19 crisis. Thanks to our conservative capital investment and our long-term policy of building up reserves, FZS is able to serve as a dependable supporter of projects in these times of crisis.

OPPORTUNITIES AND RISKS

- ✓ We feel assured that our patrons will continue to offer undiminished support to the work of FZS. We are very grateful for this. We believe that one of our strengths is the individual support which we offer to our patrons, and which we intend to enhance in the future. More and more people are including FZS or the "Hilfe für die bedrohte Tierwelt" Foundation in their wills. This is a sign of great esteem – but also a major responsibility for us.
 - The COVID-19 crisis has shown that major global tasks surrounding climate and biodiversity protection have become more important than ever. This is because both climate change and the destruction of species-rich areas are fostering the development of new types of pathogens and pandemics. The financial rescue packages of the governments and the expected fall in tax revenues may well lead to a reduction in state-funded nature conservation at this time of need. This makes it increasingly important to emphasize the importance of nature conservation in crisis prevention efforts. At the very least, in order to safeguard the successes achieved so far.

The COVID-19 pandemic has a drastic impact on regions where we work internationally: some protected areas are suffering greatly from the lack of tourism income. In many cases, there is insufficient state funding to uphold the protection mandate. Fewer tourists and fewer ranger patrols are also reducing the level of monitoring in the respective areas. This could detrimentally lead to a rise in poaching, cattle driving and logging. Further complicating the situation, are the tens of thousands of people who have lost their jobs. South America is expecting to see increases in illegal gold mining and rainforest clearance due to the high price of gold and reduced controls.

OUTLOOK

We still have sufficient options for mitigating climate change, for limiting the resulting loss of biodiversity and for minimizing the pandemic risk in sustainable ways. However, there now needs to be a great increase in these efforts. Combatting these three fundamental crises must become the guiding principle behind all our efforts.

- So Both the COVID-19 pandemic itself, as well as the measures imposed by governments to contain it, vary greatly from country to country. The circumstances can also change rapidly. We will, therefore, be adjusting our plans as the situation develops – both now and in the future. We are increasing the levels of our flexible emergency resources to ensure that we remain able to react at short notice. A further aim here is to protect previous investments.
- The German Federal Ministry for Economic Cooperation and Development (BMZ) and KfW Development Bank are collaborating with FZS and other NGOs and institutions to develop

the *Legacy Landscapes* model as a means of securing large areas of contiguous wilderness. The goal is to facilitate the long-term funding of key protected areas in order to safeguard their continued existence. The current situation clearly shows how such a financial instrument can reduce the dependence of protected areas on tourism income, for example, and thus significantly lower the associated risks.

- The Frankfurt Conservation Center project is progressing: we are working with partners in Frankfurt to set up a new interdisciplinary competence center aimed at finding innovative solutions to problems facing the natural world and mankind.
- The new financial investment structure of FZS, the expansion of its real estate portfolio and the increase in the "Hilfe für die bedrohte Tierwelt" Foundation capital are reason for optimism about the future and the continuation of our nature conservation work.







TRANSPARENCY: PLANNING, IMPLEMENTATION, CONTROLLING

Our work is based on the Society's statutes and above all on the long-term conservation strategy of Frankfurt Zoological Society. This, in turn, is based on the vision and mission and is the guiding principle behind the selection of new projects and the development of the annual conservation program. This sets out all necessary measures and relevant budgets. However, each project is unique and has its own country-specific requirements that cannot be taken into account in the representation.



Initiative Transparente Zivilgesellschaft

1 The annual conservation program is drawn up and budgeted by the project and program managers in cooperation with the executive management. It is based on the long-term strategic planning of the FZS, as well as any acute challenges which may arise such as the dramatic rise in poaching. The money comes from the Society's own funds (donations, membership fees, distributions from foundations, etc.) and funding from public and institutional donors.

The Board decides the conservation program and the related budget plan (including project investments), as well as the organizational resources.

2 The project managers and their teams submit applications to further public and institutional donors, to the extent required and possible. Typically, the funds are earmarked and time-limited. The Society's own resources, however, can be used strategically and are often used to leverage additional funds for the project work from public and institutional donors.

3 The projects in the different countries obtain the funds directly from the headquarters and then confirm receipt.

The expenditure of project funding is monitored through an internal control system (ICS) and overseen by project controlling to check for possible deviations to the budget. A financial software used in all FZS projects worldwide allows the financial processes to be reviewed and managed by the Frankfurt headquarters.

<u>4</u> The project staff implement the FZS conservation program in collaboration with governmental and other partners in the project countries.

5 There is an established reporting system for the projects and expenditure. This consists of reports on the Society's own resources and the often highly specific reporting required for public and institutional donors. Reports are generated on a regular basis, at least once per year. They are reviewed by experts from the individual projects.

Financial statements are drawn up in accordance with international and country-specific legislation (where possible) in all project countries. Independent auditors check the proper expenditure of funds in the priority countries every year. The financial statements of all project countries are compiled in the FZS headquarters.

6 Information about the conservation work in the different countries is published online and in the GORILLA magazine.

7 The headquarters of FZS in Frankfurt and the combined financial statements of the project countries are scrutinised by an independent auditor.

8 The financial statements are presented to the Board. The Board and executive management account for the conservation work and the use of FZS funds at the General Assembly. The General Assembly is responsible for discharging the Board.

FZS INVOLVEMENT IN OTHER ORGANIZATIONS

FZS has joined the "Initiative Transparente Zivilgesellschaft" founded by **Transparency International Germany** and provides transparent information online about its organizational structure and the sources and use of its funds.

FZS is an **institutional member** of BioFrankfurt e. V., Deutscher Naturschutzring (DNR), Charles Darwin Foundation and the International Union for Conservation of Nature (IUCN).

In 2019, FZS was also represented by its Executive Director, board members and heads of departments and programs on the **boards** and committees of the following organizations and institutions: Allianz Umweltstiftung, Bruno H. Schubert-Stiftung, Claus und Tas-limawati Schmidt-Luprian Stiftung Vogelschutz in Feuchtgebieten, Conservation Lake Tanganyika, Eleonore-Beck-Stiftung, Fundatia

Conservation Carpathia, Gonarezhou Conservation Trust (GCT), Initiative Frankfurter Stiftungen, IUCN Otter Specialist Group, Kashikoto Conservancy, Lowveld Rhino Trust, Polytechnische Gesellschaft e. V., Regina Bauer Stiftung, Stiftung Naturlandschaften Brandenburg (SNLB), Stiftung Zoo Frankfurt, Wildlife Crime Prevention, Walter und Monika Schneider Stiftung.

FZS launched the **"Wildnis in Deutschland"** initiative and has been coordinating its activities ever since. 17 nature conservation organizations have joined the initiative.

The foundation **"Hilfe für die bedrohte Tierwelt** – Förderstiftung der Zoologischen Gesellschaft Frankfurt von 1858 e. V." is also a member of the Bundesverband Deutscher Stiftungen (Association of German Foundations).

COMMUNICATION AND FUNDRAISING

PUBLIC RELATIONS AND FUNDRAISING

For years, FZS has kept advertising activities and public relations work on a low level in order to be able to invest more money into its conservation work. "Conservation only" is our motto. This is why patrons and members don't receive any welcome presents and why we don't do any face to face campaigns or any big publicity campaigns with posters or TV commercials. To keep our donors and friends informed, to ask them for support and to increase the number of donors we use our magazine GORILLA, brochures, our social media channels, talks and speeches and donation letters. Fortunately as far as the GORILLA and the donation letters are concerned the incoming donations exceed the funds used many times over. All activities are planned and executed by the full-time communications team in Frankfurt, Germany. If required we are supported by service providers who often grant discounts to FZS as a non-profit organization. Efficient planning and sustainable production are our priority for all communications activities. We don't pay performance-related commissions to service providers. All data concerning our supporters are subject to the strict requirements of data protection. We will not contact anyone who doesn't agree to be contacted.

We continually share information about our conservation work in our GORILLA magazine, on our website and on our social media channels. Furthermore, in 2019 there were a number of articles in national and international newspapers and online media which reported about our work or which quoted our colleagues from the field as experts in conservation matters. Project staff also gave talks, attended events, gave interviews, supported TV productions and took part in filming documentaries. Shooting in remote wilderness areas can be very time consuming.

DONATIONS AND EXTERNAL FUNDS

In 2019, FZS received donations and contributions of EUR 2.44 million. In addition, we were able to submit project applications to institutional and public donors, such as KfW Development Bank, the Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ) and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). In this way we were able to raise further EUR 12.64 million for our nature conservation work. Every Euro donated has a fivefold effect!

OUR LARGEST INSTITUTIONAL DONORS IN 2019

The funds listed below were used in the projects in 2019.

INTERNATIONAL	PROJECT COUNTRY	EURO
The Wildcat Foundation	DR Congo, Zambia, Tanzania	1,685,343
The Wyss Foundation	Tanzania, Zambia	1,272,669
U.S. Department of State International Narcotics and Law Enforcement Agency (INL)	Tanzania, Zambia	1,247,126
U.S. Fish & Wildlife Service	DR Congo, Zambia, Tanzania, Peru, Indonesia	691,103
U.S. Agency for International Developement (USAID)	Zambia	554,835

GERMANY	PROJECT COUNTRY	EURO
KfW Development Bank	Ethiopia, Tanzania, Ukraine, Zambia	1,656,319
Deutsche Gesellschaft für inter- nationale Zusammenarbeit (GIZ)	Ethiopia, Tanzania, Zambia	1,000,940
German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)	Germany, Ukraine, Belarus, Indonesia, Peru	387,720
KfW Foundation	Tanzania, Guyana, Peru, Indonesia	132,145
Karl Kübel Foundation	Ethiopia	112,328

Although the number of mountain gorillas is rising slowly, there still only exist around 600 adult individuals of this critically endangered species.

"HILFE FÜR DIE BEDROHTE TIERWELT" FOUNDATION

The "Hilfe für die bedrohte Tierwelt" Foundation was founded in 2001 from the assets of FZS. Its declared goal – of preserving the earth's biodiversity – is realized by FZS. It has untouchable foundation capital of EUR 60.33 million. In the year under review, the Foundation provided EUR 1.75 million for the nature conservation work of FZS.

The "Hilfe für die bedrohte Tierwelt" Foundation, based in Frankfurt am Main, is a legally independent foundation under private law. It is recognised as a non-profit organization for the promotion of nature conservation and animal welfare and enjoys tax exemption on the basis of the last notice of exemption and the annex to the notice of corporate tax exemption. The Foundation is based on a special account of the same name, which was used by Bernhard Grzimek from 1961 to collect donations in conjunction with his television program "Ein Platz für Tiere". It is represented by a Foundation Board consisting of up to ten members. Ten members held office in the year under review. Each is appointed for three years and works on a voluntary basis. The Chairman of the Foundation Board is Gerhard Kittscher. The Foundation Board makes decisions about how revenues are spent and ensures that the Foundation is meeting its statutory commitments. "Hilfe für die bedrohte Tierwelt" Foundation is a member of the Bundesverband Deutscher Stiftungen (Association of German Foundations). Patrons who wish to make a sustainable and long-term commitment can support the "Hilfe für die bedrohte Tierwelt" Foundation by making a donation or creating a named endowment or trust. This is possible during the lifetime of the individual concerned, but also by means of a testamentary decree.

JOHANNA SAMEL FONDS

In 2005, the non-profit Johanna Samel-Foundation was established. It was founded by Johanna Samel, a citizen of Frankfurt, who has always been interested in youth and environmental protection. In 2005, the Foundation Supervisory Authority of the City of Frankfurt transferred the administration of the Foundation to FZS. In 2018, at the request of the Foundation Board, the Foundation was dissolved, as the small capital volume of the Foundation and the low interest rate level endangered the sustainable fulfilment of the foundation's purpose. In accordance with the statutes, the assets were transferred to the "Hilfe für die bedrohte Tierwelt" Foundation.

DR. ALFREDO MAASS FUND

The Dr. Alfredo Maass Fund is a named fund and part of the basic assets of the "Hilfe für die bedrohte Tierwelt" Foundation. The fund was established in accordance with the will of Dr. Alfredo Maass with a capital of EUR 0.58 million. According to the will of the founder, the revenues of the fund will be used for the project work of FZS in the Manu National Park in Peru. In 2019 this amounted to around EUR 18,730.

"CLAUS UND TASLIMAWATI SCHMIDT-LUPRIAN STIFTUNG VOGELSCHUTZ IN FEUCHTGEBIETEN" FOUNDATION

The "Claus und Taslimawati Schmidt-Luprian Stiftung Vogelschutz in Feuchtgebieten" Foundation is a trust foundation. It was established in 2012 with initial capital of EUR 0.5 million under the umbrella of the "Hilfe für die bedrohte Tierwelt" Foundation. The purpose of the Foundation is to provide financial support to FZS projects for the conservation and creation of wetlands for the protection of the bird species which are dependent on them. The balance sheet total of the trust foundation increased to EUR 6.35 million as a result of generous endowments by the founder. The investment assets of the Foundation are invested in full in the special fund of the parent foundation. In 2019, the Foundation distributed EUR 79,000 from its proceeds for project work in Polesia.

FINANCIAL REPORT OF THE "HILFE FÜR DIE BEDROHTE TIERWELT" FOUNDATION

ACCOUNTING AND VALUATION METHODS

The annual financial statements as of Tuesday, December 31, 2019 were prepared in accordance with the provisions of sections 264 et seq. of the German Commercial Code (HGB). The statement of income was prepared in accordance with the commercial law nature-of-expense method according to section 275 subsection 2 HGB, taking into account the specific characteristics of the Foundation's expense and income presentation.

ASSETS

FIXED ASSETS

Tangible assets

At the beginning of 2019, FZS transferred two pieces of real estate to the value of approximately EUR 2 million to its Foundation. In addition, five further residential properties in Frankfurt am Main, to the value of almost EUR 10 million, were added to the Foundation's portfolio in 2019 from an estate. The aims of the Foundation are to build up a real estate portfolio with long-term earnings potential, to diversify investments and to secure the Foundation's earning capacity. All real estate is managed by a property management company. In total, the Foundation put a direct investment real estate portfolio valued at EUR 12.22 million onto the balance sheet within one year.

Financial assets

The financial assets consist of securities and real estate investments. These are valued at acquisition cost. Value adjustments in the form of unplanned depreciation are made to cover decline in value. Bonds, the acquisition costs of which are higher than the nominal value, are written down at the time of addition at the lower face value. Financial assets acquired by the Foundation at no cost are recognized at their fair value at the time of addition. The majority of the financial assets are invested in the Foundation's own master fund, the HI-Biodiversity Conservation Fund. The master fund is tailored to the specific needs and characteristics of the organization and the investment guidelines of the Foundation. In 2019, the adjustment item for the special fund built up in previous years was reduced. The retained earnings were distributed and reinvested. Therefore, the value of the financial assets increased by the amount of the adjustment item built up so far. Bonds or mixed funds are still held in small portfolios in order to provide short-term liquidity for possible real estate renovations, direct real estate investments or projects. It is also planned to develop suitable plots of land that the Foundation receives through donations or inheritances into residential real estate projects. The Foundation can then make long-term use of the resulting income.

ASSETS in TEUR	2019	2018
FIXED ASSETS		
Tangible assets	12,215	0
Financial assets	56,304	45,967
CURRENT ASSETS		
Receivables and other assets	1,639	54
Liquid assets	657	1,919
BALANCE ITEMS for undistributed fund earnings	0	8,977
TRUST ASSETS Claus und Taslimawati Schmidt-Luprian Stiftung Vogelschutz in Feuchtgebieten	6,471	6,349
TOTAL	77,286	63,266

CURRENT ASSETS

Other assets

Receivables and other assets are comprised primarily of receivables from estates and bequests (EUR 0.45 million) and earnings distributed from the master fund in 2020 (EUR 1.16 million).

Liquid assets

Bank balances and cash in hand total roughly EUR 0.66 million (previous year: EUR 1.92 million). These result from donations, estates, real estate income and matured financial investments which have not been reinvested. The liquidity forms the basis of the Foundation's distribution to the Frankfurt Zoological Society in the following financial year.

BALANCE ITEMS FOR UNDISTRIBUTED FUND EARNINGS

The balance item was dissolved in 2019 through the distribution of the master fund.

LIABILITIES in TEUR	2019	2018
FOUNDATION ASSETS		
Foundation capital	60,334	46,301
Revenue reserve	8,152	8,100
Regrouping result	636	652
Operating reserve	1,592	1,750
PROVISIONS	34	10
LIABILITIES	67	104
TRUST ASSETS Claus und Taslimawati Schmidt-Luprian Stiftung Vogelschutz in Feuchtgebieten	6,471	6,349
TOTAL	77,286	63,266

LIABILITIES

FOUNDATION ASSETS

Foundation capital

The Foundation capital increased by EUR 14.03 million, from EUR 46.30 million in 2018 to EUR 60.33 million in 2019. A large part of this comes from the inheritances that were transferred to the Foundation capital.

Revenue reserve

The free revenue reserves were reduced by EUR 0.31 million in 2018 in order to make an increased donation to FZS. In 2019, EUR 0.51

million could be transferred back to the revenue reserve. This reserve has risen to EUR 8.15 million and will safeguard the mission of the Foundation for years to come, even in difficult financial times.

Regrouping result

The regrouping reserve fell from EUR 0.65 million to EUR 0.64 million. This was due to the need to write down securities according to the lower-of-cost-or-market principle.

Operating reserve

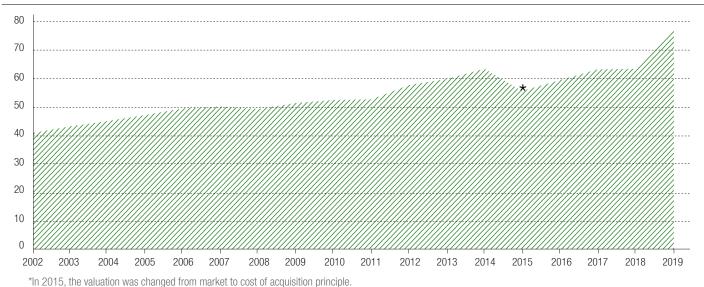
After deduction of the free reserve, the entire annual result was allocated as an operating reserve for nature conservation in the amount of EUR 1.59 million (previous year: EUR 1.75 million, including the release of the free reserve in the amount of EUR 0.31 million). This will be distributed in 2020 for FZS conservation projects.

PROVISIONS

The provisions amount to EUR 34,000 (previous year: EUR 10,000) to cover the costs of preparing the annual financial statements, and planning costs for a possible new Foundation real estate project.

LIABILITIES

The liabilities amounted to EUR 67,000 in 2019 (previous year: EUR 104,000). Much of this is attributable to a right of residence on a property registered in the land register, which was transferred by FZS to the Foundation from an estate.



DEVELOPMENT OF THE BALANCE SHEET TOTAL FROM 2002 TO 2019 in million Euro

PROFIT AND LOSS ACCOUNT in TEURO	2019	2018
Total revenues	1,991	1,822
Total expenses	-401	-377
Net profit for the year	1,590	1,445
Setup of reserves	-2	-305
Distributable profit	1,592	1,750

REVENUES

Net income before appropriation of funds in 2019, including donations and grants from other foundations as well as expenses, amounts to EUR 1.59 million (previous year: EUR 1.45 million). The Foundation thus posted a better result in the year under review than in the previous year. This was mainly due to the higher ordinary income from the master fund and the rental income from the Foundation's own real estate. In addition, the "Hilfe für die bedrohte Tierwelt" Foundation received a donation of EUR 0.56 million from the Eleonore Beck Foundation (previous year: EUR 0.55 million). This is the highest individual donation from another foundation.

At the end of 2019, the Foundation's master special fund posted a performance rate of 7.83 percent. The reserves of the Foundation are thus sufficiently large. The corona crisis led to a significant but hope-fully temporary reduction in the value of the capital investments in the first quarter of 2020. However, even if the crisis lasts longer than expected, the Foundation will be able to maintain its charitable support. The Foundation's entire net profit for the year is used to donate funds to FZS, in accordance with its statutes. The distributable funds decreased slightly to EUR 1.59 million (previous year: EUR 1.75 million), as part of the reserve had been released for distribution in the previous year in addition to the net profit for the year.

EXPENDITURES

EUR 1.75 million were distributed by the Foundation to Frankfurt Zoological Society for conservation work in 2019. The total Foundation expenditure amounted to EUR 379,000. Of this amount, EUR 0.10 million were incurred for depreciation on buildings and EUR 0.25 million for real estate renovation and land costs. EUR 55,000 were spent on other expenditure, administration and auditing of the Foundation. The low costs of the Foundation are only possible because the FZS actively manages its Foundation.



Donations Account of the "Hilfe für die bedrohte Tierwelt" Foundation IBAN: DE63 5005 0201 0000 3102 80 BIC: HELADEF18522

DONORS AND PARTNERS 2019

List grouped by headquarters of institutions and organizations

AUSTRALIA

Griffith University International Elephant Project, IEP Perth Zoo The Orangutan Project, TOP Wildlife Conservation International

AUSTRIA WWF Central and Eastern Europe WWF Österreich

BELARUS

Administration of Bielaviežskaja Pušča National Park

APB-BirdLife Belarus

Bahna

BRAZIL

Instituto Araguaia

COLOMBIA

Fundación para la Conservación y el Desarrollo Sostenible, FCDS

Parques Nacionales Naturales de Colombia, PNNC

Wildlife Conservation Society Colombia, WCS Colombia

WWF Colombia

DR CONGO

Institut Congolais pour la Conservation de la Nature, ICCN

Virunga National Park/Virunga Foundation

ECUADOR

Fundación Charles Darwin, FCD

ETHIOPIA

Bale Mountains National Park

Charities and Societies Agency, Chsa

Ethiopian Wolf Conservation Programme

Ethiopian Wildlife Conservation Authority, EWCA

Oromia Agriculture and Natural Resource Bureau, OANRB

Oromia Environment Forest and Climate Change Authority

Oromia Forest and Wildlife Enterprise

Oromia Regional Health Bureau, OHB

Oromia Livestock and Fishery Resource Development Bureau, OLFRDB

Oromia Planning and Economic Development Commission, PEDCO

Oromia Rural Land Administration and Use Bureau

Population, Health and Environment – Ethiopia Consortium

SOS Sahel

EU

European Union

FRANCE

United Nations Educational, Scientific and Cultural Organization, UNESCO

GERMANY

AHT Group AG

Akademie für Zoo- und Wildtierschutz e. V.

Albert und Barbara von Metzler-Stiftung

Betreibergesellschaft der Internationalen Naturausstellung Lieberoser Heide GmbH, INA

BioFrankfurt e. V.

Bruno H. Schubert-Stiftung

Bund für Umwelt und Naturschutz Deutschland, BUND

Bundesamt für Naturschutz, BfN

Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit, BMU

Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung, BMZ

BUNDstiftung

Bürgerbewegung Freunde des Spessarts e. V.

Charlotte-und-Werner-Herrmann-Stiftung

Claus und Taslimawati Schmidt-Luprian Stiftung Vogelschutz in Feuchtgebieten

Convention on Migratory Species of Wild Animals, CMS

Deutsche Gesellschaft für Internationale Zusammenarbeit, GIZ

Deutsche Postcode Lotterie

Deutsche Umwelthilfe

Deutsche Wildtier Stiftung

Deutscher Naturschutzring, DNR

Dr. Marschner Stiftung

Ebert/Düttmann Stiftung

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Sonja Steiger, steiger@zgf.de +49 (0) 69 94 34 46 17

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A crested barbet in Gonarezhou, Zimbabwe

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Frankfurt Zoological Society

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