Connected Conservation FOUNDATION

Annual Review 2019–2020

www.connectedconservation.foundation

Founding Partners

NTT cisco dimension data

Dear Friends,

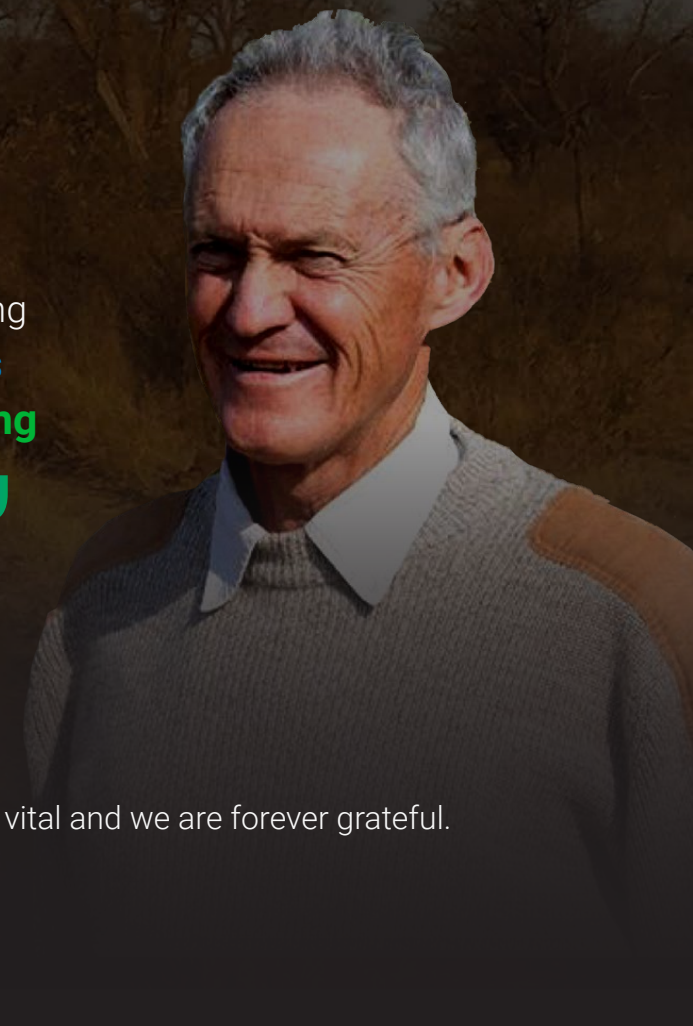
Our vision for Connected Conservation Foundation is a world where animals roam free. The past 12 months were indeed tough; however, thanks to our corporate partners NTT, Dimension Data, and Cisco and supporters like Birdies4Rhinos, we continue to make great strides in applying technology to protect wildlife and ecosystems. We are working together to combine our collective capabilities for urgent action to stop the biodiversity crisis and protect the wildlife that is now more vulnerable than ever before.

The United Nations reports that 1 million species will face extinction in the next 10 years and the decline in species population is happening 100 times faster than ever seen before. We must act and quickly to implement transformative approaches to reverse these trends.

The pandemic has accelerated challenges for wildlife conservation. With tourism down and unemployment in wildlife parks rising, more animals are exposed to poachers and questionable practices. Local communities that depend on wildlife-based economies are left devastated. The gains made to create sustainable benefit models between communities and wildlife reserves have come undone.

We stand in solidarity with those like-minded conservationists who share our vision and support their work to increase wildlife reserve protection. Looking ahead, we have a unique opportunity to rebuild and help species recover. The Connected Conservation Foundation approach is proactive. We work hard to harness the most appropriate technology and innovation, helping conservancies stay one step ahead, to stop wildlife crime, prevent human-wildlife conflict and ensure healthy wildlife habitats.

There are reasons to hope. We see more global awareness and attention to this issue than ever before. At the Foundation, we are striving to expand our partners and supporters for new project sites to protect new species and geographies. Connected Conservation now has 5 long-running and successful field projects across Kenya, South Africa and Zambia. New technologies are going into a further 5 protected areas this year, with additional planning for 2022.



> “There is no time like today to **embrace our responsibility** to do everything we can to **preserve the world’s precious natural ecosystems** and give them a **fighting chance to survive.**”
>
> **– Bruce ‘Doc’ Watson** *Chairman and Founder of Connected Conservation Foundation*

Thank you for coming on this journey with us.

Your support of Connected Conservation Foundation is vital and we are forever grateful.

Protecting wildlife and ecosystems for today and tomorrow

Connected Conservation Foundation exists to protect wildlife and ecosystems, provide local education and support communities through technology.

By uniting the collective capabilities of local partners, technology leaders and conservationists, we apply digital solutions to solve local wildlife challenges and bring benefits to both wildlife and people.

Together, we are working towards our 2030 goal: to protect over 10 million hectares of natural habitat, conserve 50+ threatened species and improve the lives of more than 10,000 people living in local communities. We believe technology has a critical role in helping us reach the United Nation's ambition to protect 30% of the planet by 2030. Data-driven approaches are needed to help steer conservation activities, mitigate threats and capture the benefits.

> **"The use of technology is our big multiplier and it's given us an extraordinary jump ahead in terms of our capacity to respond."**
>
> ***- Ian Craig***
> *Chief Conservation Officer and founding member Northern Rangelands Trust*

Connected Conservation Foundation works to equip teams with large-scale connectivity and communications infrastructure, data services, satellite imagery, radios, cameras and sensing devices.

These serve to improve the ranger's visibility of vast protected areas, offering real-time conservation intelligence to track wildlife, people, vehicles and monitor the suitability of wildlife habitats.

Our solutions combine an ecosystem of technologies from our partners at NTT, Dimension Data, Cisco and Vulcan, and local engineering expertise based in-country to help reserve managers implement the solutions. We implement a Reserve Area Network to help field teams pre-empt and respond to conservation challenges such as poaching, human-wildlife conflict and habitat destruction and bring efficiencies to conservation management operations. As part of the rollout, we provide specialised training, operational support and technical maintenance to use technologies in anti-poaching and conservation management activities.

We are working to improve technical capabilities and education opportunities for conservationists and local people. These are really big conservation problems and no single organisation can solve them alone. We must work together to bring together the best products, experts and capabilities for impactful long-term solutions.

"THE INTERNATIONAL UNION FOR CONSERVATION OF NATURE (IUCN) TALKS ABOUT THE IDEAL RECOMMENDED RANGER RATIO TO BE 1:50 PER SQUARE KILOMETRE, BUT USING TECHNOLOGY WE CAN EXTEND OUR RANGER RATIO BEYOND 1:100"

– Sport Beattie, CEO, Game Rangers International

Supporting a community-centred approach to wildlife conservation

We envision a world where wildlife and people coexist and thrive together. We aim to implement projects that consider sustainable approaches, working with local partners to ensure activities deliver benefits to both wildlife and local people.

Our solution works to safeguard wildlife but also helps brings peace and security to surrounding communities. The illegal wildlife trade undermines the rule of law and incentivises local crime. So we help local peace ambassadors use our communications and data analysis technologies to pre-empt crime within communities and mitigate against conflict.

By taking a holistic view of the social, economic and ecological contexts where we work, we can connect people with the right technology for their unique challenges.

Additionally, digital technology is a great enabler of development. Looking ahead, we're striving to offer new connectivity and resources to local people as part of the overall conservation solution.

We aim to deliver connectivity to areas previously without Wi-Fi facilities, offering new ways to help conservancies communicate better with communities and facilitate further digital education and micro-enterprise opportunities.

CONNECTED CONSERVATION FOUNDATION TIMELINE

2015

Connected Conservation was founded by Cisco, NTT and Dimension Data. Starting the **Sabi Sands pilot project** to create a pro-active technology solution **protecting Rhino** across a large game reserve in South Africa, it helped field teams achieve a **96% reduction in poaching during 2016, 2017 and 2018.**

2017

Phase 2 of South Africa pilot deployed new advanced camera technologies and **LoRa network and sensors** to safeguard new areas of this South African reserve, **reducing response time** to conservation issues from **30 to 7 minutes.**

2018
Zambia

Worked with new partners to **deploy comprehensive area connectivity and thermal cameras** to create a virtual fence line to **stop poaching and illegal fishing**, bringing a dramatic improvement on real-time data detecting illegal fishing incursions.

2019
Lewa Wildlife Conservancy Kenya

Worked with Northern Rangelands Trust to bring **communications and connectivity** to vast areas. This enabled the monitoring of wildlife and ranger activity, **improving conservation operations** with new network solutions.

2020

Connected Conservation Foundation was launched – a new, non-profit organisation registered in the UK and operating independently under a board of directors' governance.

2020
Northern Rangelands Trust

Planning design for a formidable new project that aims to **encompass NRT conservancies**, including NRT Centre, Dol Dol, Wamba, Sera, Nyambene and Marsabit.

2020
Madikwe South Africa

Planning and design for **deployment of LoRa and Wi-Fi networks** to pre-empt and **halt poaching** through real-time data and communications.

Projects focus: Northern Rangelands Trust, Phase 1: Lewa Wildlife Conservancy, Northern Kenya

Deployed in 2019, this technical solution is helping to pre-empt human-wildlife conflict, prevent poaching and assist rangers with habitat and rehabilitation management. Lewa Wildlife Conservancy is a global leader in protected area management and represents hope for a rich diversity of wildlife, including endangered black rhino, African elephant, leopard and the Grévy's zebra.

Across the world, rangers play an indispensable role in protecting biodiversity and ecosystems and work in challenging conditions. Researchers found that only 43.2%[1] of rangers said they always had access to communications devices on patrol or at outposts in a survey of ranger working conditions. This statistic is alarming as rangers often find themselves in threatening situations from lively wildlife or potential confrontation with poachers.

In Lewa, rangers need ways to communicate with their central control room at all times so they can call for help or give a warning of potentially harmful activity to wildlife or themselves. Equally, when the operations room sees something of interest from other cameras or data sources across the protected area, the operations room must be able to divert ranger patrols to mitigate threats immediately

Connected Conservation partners have extended secure LoRa connectivity and communications coverage across black spots and vital conservation areas.The local Dimension Data team based in Kenya has installed new masts and onboarded digital radios to a new communication backbone. They have brought fully encrypted, reliable and secure communications and connectivity to vital black spots and removed communication bottlenecks.

This technology, coupled with Vulcan's EarthRanger software, allows the operations team to track ranger patrols from GPS coordinates communicated from their radios and ensures effective communication between central control and rangers anywhere in the park. This helps teams make informed decisions from real-time data to predict and effectively deploy resources to keep wildlife and people safe.

Impact stats:

- Secure connectivity and communications to protect 25,000 new hectares of vital wildlife habitat
- Better conservation management with onboarding of digital radios for ranger teams
- Only 1 elephant poached in 2020
- The lowest level of elephant poaching in member conservancies on record

1. Employment conditions of public sector rangers: A major underaddressed problem (Belecky.M, Parry.J, Singh.R).

"FOR ME TO ADMINISTRATE PROPERLY, I NEED TECHNOLOGY. THERE ARE SEVERAL TECHNOLOGIES THAT WE USE HERE: RADIO FOR EFFECTIVE COMMUNICATION, ASSET TRACKING, GPS. ALL OF THOSE COMBINED MAKE MY WORK EASY."

– Samuel Lekimaroro, Head of Security, Northern Rangelands Trust Conservancy

Project Focus: South African Game Reserve

In 2015, Connected Conservation partners began the first phase of the pilot project to provide and install a Reserve Area Network in a South African game reserve Sabi Sands. Phase 2 followed in 2018 with enhancements and improvements, including:

- The collection of biometric data at gates to track the identities of those coming in and out of the reserve.
- Automatic recognition to collect vehicle license numbers.
- Thermal cameras and acoustic fibre to secure perimeter fencing.
- LoRa Network and hidden sensors to detect the movement of people through wildlife hotspots.
- Databases quickly identify vehicles and historical intelligence for secure and proactive decision-making.

We continue to maintain the project installations and work on the design of phase 3, which looks to expand the success into new areas. Our technical architecture team created an extension with new LoRaWAN sensors and thermal/IR cameras to secure new poaching hotspots.

This site is also used to trial cutting-edge technology and brings new innovations to the ground. As poachers become familiar with the security outposts, criminal syndicates have moved to new areas of the park where poaching incidents have started to rise. Our new portable network solutions are being trialled to help teams stay one step ahead.

> **"CONNECTED CONSERVATION SOLUTION HAS BEEN A GAME-CHANGER. MOVING US OUT OF CRISIS MANAGEMENT AND ALLOWING US TO PRE-EMPT AND PREDICT ISSUES IN THE FIELD BEFORE THEY OCCUR AND TO PLAN ACCORDINGLY."**
>
> ***– Oscar Mthimkhulu, Warden, Sabi Sands Reserve***

Sources of funding

Total income for the first year of operation for the Connected Conservation Foundation was $688,449. Income and donations from corporate partnerships totalled $590,300 with $98,149 of income from private philanthropy. In addition, contributions of technology equipment from corporate partners amounted to millions of dollars of investment. We are very grateful to our supporters.

Looking ahead

We are partnered with like-minded individuals and organisations to implement new technologies in 5 new sites across Africa and Asia. We're working closely with on-the-ground organisations to understand their technical requirements to improve their conservation management operations in multiple countries, including:

Northern Kenya Phase 2

Connecting real-time data for 6 new conservancies to NRT's HQ, including NRT Centre, Dol Dol, Wamba, Sera, Marsabit and Nyambene. NRT is home to elephants, black and white rhinos and critically endangered hirola. The technology will increase ranger capacity to monitor and manage competition between communities and wildlife for water and grazing, and monitor elephants, livestock, and carnivore movements to pre-empt and mitigate poaching and human-wildlife conflict.

It also supports the management of the elephant orphanage, which saw four elephant calves released into Sera in 2020.

South Africa

An extension into new areas situated next to the Kruger National Park and the other bordering Botswana. These sites are home to the big 5 and a diverse range of species.

The project aims to reduce illegal poaching by increasing coverage and empowering rapid ranger response to safeguard rhinos against a recent increase in poaching activity seen during the Covid-19 pandemic.

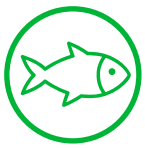
Creating lasting impact for the next generation

With your generous support and ongoing commitment to conservation, here's an overview of successes in the sites we support. Please note that we cannot share all of the exact project locations in the countries listed below for security concerns.

South Africa, Pilot Project:

Technology to help halt rhino poaching

- Long-running solution of +5 years, now in 3rd phase.
- Protects 62,000 hectares with a reserve area network.
- Technology, coupled with successful management, saw a 96% reduction in poaching over the first 18 months with zero poaching over 2017 and 2018, and new reductions in 2020 with the redeployment of solutions into new areas.
- Reduction in response time to conservation issues from 30 to 7 minutes anywhere in the reserve.



Zambia:

A virtual fence line of thermal cameras to stop poaching and illegal fishing

- Network connectivity across 200,000 hectares.
- Real-time data on the presence of boats with potential poaching intent dramatically improved.
- Intelligence brought into a new joint operations centre to increase rapid response and apprehensions.

Northern Kenya:

Combating poaching, human-wildlife conflict and enabling ecosystem monitoring

- Designing and implementing network infrastructure and devices to monitor and protect wildlife across 25,000 hectares of Lewa Wildlife conservancy.
- Better conservation management with onboarding of digital radios for ranger teams.
- Only 1 elephant poached in 2020.
- The lowest level of elephant poaching in member conservancies on record.

Thank you for your support

In today's environment of change and disruption, we are incredibly grateful for our donors' constant support and commitment. Whether financial or material, we are extremely grateful to those who share beliefs in our dreams for a better world where animals can roam free.

Special thank you to:

NTT

cisco

dimension data

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Tusk

JSE