



ANNUAL REVIEW 2023





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EXECUTIVE SUMMARY

We are pleased to present the **NATURAL STATE** 2023 Annual Report.

This report summarises what we have achieved thanks to our partners and supporters, highlighting **what to expect in 2024**.

We remain focused on tackling the two most significant barriers to attaining nature restoration at scale: **lack of funding** flowing to the sector and **insufficient capacity** to deliver high-quality projects.

We aim to remove these barriers by:

- i. **Transforming the funding model for nature restoration** through innovative financing mechanisms and cost-effective, transparent impact monitoring and
- ii. **Building a generation of restoration leaders and practitioners.**

3
Years
old

We have been operating in Kenya for 3 years and have established a 501c3 not-for-profit in the U.S. and a wholly-owned non-profit subsidiary in Kenya. Our research center has been built with offices, the **most advanced carbon lab in Northern Kenya**, and we will soon begin the build of our new educational facility on the edge of Lolldiaga Conservancy, Laikipia.

45
Staff
Members

NATURAL STATE has grown into a **global team of 45 staff members**, with most members stationed at the research centre near Mt. Kenya. We have three programmatic teams focused on our three pillars of work: impact monitoring technology, innovative financing mechanisms for nature, and capacity building. This report highlights the significant achievements of these three teams and acknowledges the invaluable support of the operations, communications, and fundraising teams.

SOLID Partnerships

Our model is based on **solid partnerships**. We have built up an amazing group of **collaborators with world-leading academics, NGOs, and corporate institutions** over the past three years, including EY, Synthetica, Neoxia, Google, Tree Global, University of Oxford WildCRU, University of Oxford Leverhulme Centre for Nature Recovery, Cornell Lab of Ornithology, MIT, Harvard Business School, Institute for Integrative Conservation at William & Mary University, the Wyss Academy for Nature, Wildlife Research Training Institute, African Leadership University, World Agroforestry Centre (ICRAF), Lewa Wildlife Conservancy, Borana Conservancy, Laikipia Conservancies Association, WildTeam and The Nature Conservancy (TNC).

2023 Key Growth

In 2023, **NATURAL STATE** primarily concentrated on **key growth** areas, including **team expansion, fundraising efforts, fostering strategic collaborations, the establishment of the carbon lab, acquisition of the site for the education centre, testing remote sensing and A.I. technology for impact monitoring, creation of prototype impact monitoring dashboard, designing innovative financial mechanisms for nature, and ensuring robust systems, policies, and legal structures are in place**. These endeavours reflect the organisation's commitment to holistic development and steadfastness to achieving its objectives.

2024 Rapid Growth

This will set us up for **rapid growth** in 2024 when we launch the portal and begin to test and implement some new financial mechanisms for nature. We will also **start the construction of the African Centre for Nature Restoration**. Here, we will offer **courses for community members on restoration and regenerative agriculture** and for professionals who wish to develop a career in nature restoration, sequestering or protecting carbon. In 2024, we are also competing in the finals of the Rainforest XPrize, where we will **demonstrate our innovative technology and systems**. Finally, we have completed our **NATURAL STATE** three-year strategy and are happy to share it with anyone interested in our ambitious plans.

Welcome to NATURAL STATE's 2023 annual report.

The following section outlines progress over the past 12 months and highlights what to expect in 2024.

IMPACT MONITORING

Revolutionising impact monitoring for biodiversity, carbon, and social benefits

Our impact monitoring team is developing cost-effective, scientifically robust, and scalable solutions to quantify a project's impact on carbon, biodiversity, and local communities. These will underpin new nature finance mechanisms to bring billions into Africa's restoration sector and provide management information to project teams to ensure high quality, investable project delivery.

Global efforts to measure impact using satellite data and existing global datasets exist, but when it comes to biodiversity and communities, and in many cases carbon, robust models need to be built from the ground up. Our comprehensive solution consists of these scientific models, a field-to-cloud data transfer system named KATUMA ("to send" in Swahili), and the **NATURAL STATE** Impact Portal which provides project insights to stakeholders through interactive dashboards. Our team is based at the **NATURAL STATE** Research Centre at Mt. Kenya's base, leveraging over 100,000 acres across diverse biomes and land management regimes as a testing ground.

We aim to complete the "minimum viable product" of our solution in 2024; a streamlined field-to-dashboard technical solution ready to be customised for different financial instruments, biomes, and land management types. In parallel, we have a number of R&D streams running with our academic and technology partners for continuous improvement of our solutions.

“ East Africa will be leading the way in the development of both innovative financial mechanisms for nature and the technology and systems needed to measure impact.”

| *Bea Karanja*
| *Director Natural State*



In 2023

the Impact Monitoring team:

Cross-programme

- **Developed ten collaborations with world-leading institutions including MIT, Harvard, ICRAF, Oxford University, and the Cornell Lab of Ornithology**, to build capacity and expertise in carbon and biodiversity monitoring in savannas.
- **Expanded the team from 9 to 19 members** with rolls ranging from software programmer to geodata scientist and biometrician.
- **Built the most advanced carbon lab in Northern Kenya**, developing the capacity to conduct in situ spectroscopic soil and plant sample analyses.

Minimum Viable Product

- **Worked with three companies to develop the base infrastructure for the NATURAL STATE Impact Portal.** This will be used to trial five different use cases for different financial instruments and restoration landscape types. We will refine the Impact Portal and create additional functionality over 2024 to suit the requirements of other financial instruments.
- **Designed and started building the automated field-to-cloud data transfer system “KATUMA”** that will be completed in Q1 of 2024, providing streamlined and traceable data transfer from sensor storage units to online repositories.
- **Deployed LiDAR over 450km² landscape and built a 3D map of the area.**
- **Collected 6,000 camera trap days of data and developed machine learning capabilities to identify over 20 species of medium-large mammals.**
- **Collected 1,500 acoustic sensor days of data, worked with three experts to validate calls for over 150 bird species, and reliably classified 99 species using A.I.**

Research and Development

- **Surveyed 44 carbon pool plots to measure above- and below-ground carbon** and developed the allometric equations necessary to use LiDAR to estimate carbon stocks quickly and remotely for African grasslands.
- **Set up 9 Global Ecological Monitoring (GEM) plots across Lewa, Borana, and Lollidaiga conservancies** to monitor and better understand how carbon is sequestered in savannas and transitions from plants to soil and minerals as the landscape is restored.
- **Qualified for the finals of the Rainforest X-Prize**, a global 5-year, \$10 million competition that convenes innovators and experts across disciplines – from conservationists and Indigenous scientists to engineers and roboticists – with the challenge to use novel technologies to expedite the monitoring of tropical biodiversity. NATURAL STATE is collaborating with Purdue University and the Illinois Institute of Technology to develop state-of-the-art, auto-piloted drones to deploy and collect packages containing acoustic, camera, and eDNA sensors to identify key species in tropical rainforests. NATURAL STATE will leverage the power of the NATURAL STATE Impact Portal to automate the classification of acoustic and camera trap data and develop bespoke capabilities to ensure outputs benefit local communities.

Cross-programme

- **Develop new collaborations with leading local and global institutions such as University College London (UK), Strathmore University (Kenya), University of Embu (Kenya) and George Mason University (USA)**, to build capacity to monitor new wildlife taxa and improve our ability to measure changes at the landscape level using satellite imagery. This includes trialling connected field devices using large-scale network connectivity to monitor changes in the environment in real-time.
- **Further build out our laboratory capabilities** to refine our carbon analyses and include analysis of invertebrate taxonomy and preparation of eDNA samples.

Minimum Viable Product

- **Complete the NATURAL STATE Impact Portal Version 1**, a streamlined field-to-dashboard technical solution ready to be customised for different financial instruments, management uses and biomes.

NATURAL STATE Impact Portal V2

- **Commence work on the NATURAL STATE Impact Portal V2**, to customise it for five different use cases: Integrated carbon and biodiversity credit, Rewilding credit, Custodian credit, measuring the impact of businesses on the environment, and protected area management.
- **Develop new partnerships with community groups and other stakeholders** to understand better how local communities and Indigenous people monitor their environment, value their resources and how they would most benefit from the different financial mechanisms we are developing.

Research and Development

- **Complete the first version of the Restoration Index exploring how productivity, biomass, structure, functional diversity, and species diversity change at different levels of intactness.**
- **Develop clear protocols to monitor additional taxonomic groups** to contribute to biodiversity indices in the NATURAL STATE Impact Portal.
- **Complete our Carbon Pool Plot monitoring work by mid-year and refine our LiDAR modeling** to enable us to scale up above and below-ground carbon predictions.
- **Complete the deployment of our Global Ecological Monitoring (GEM) plots** and monitor these monthly to measure how carbon is cycling through the system and how restoration affects wildlife community structures. These plots will be monitored for the next 30 years.
- **Continue the field collection work in the Lewa/Borana/Lolldaiga savanna landscape**, refining our use of camera traps, acoustic sensors, and substrate sampling to understand better the cycling of carbon and the links to biodiversity metrics and social indicators.
- **Win the Rainforest XPrize and implement our innovative technologies and financial tools to pilot rapid assessment projects that benefit local Indigenous communities in the Brazilian Amazon.**



“

New financing mechanisms for nature, underpinned by robust and cost-effective impact monitoring, have the potential to unlock billions of dollars for nature and catalyse large-scale restoration globally.”

JONATHAN BAILLIE
PRESIDENT
NATURAL STATE



“

At the core of Natural State is our field team - they are fundamental to building a new business model for restoration across Africa”

Nzuki Waita |



NATURE FINANCE

NATURAL STATE is pioneering innovative financial mechanisms to attract the magnitude of private sector capital needed to scale the sector. These financial mechanisms must integrate biodiversity, carbon, and social impact to channel funds to high-quality restoration projects that benefit nature, climate, and people.

Building new catalytic financial mechanisms for nature

Underpinned by the impact monitoring systems, we are developing a portfolio of financial mechanisms and instruments aimed at catalysing financing for nature from diverse funding sources. In 2023, we focused on getting the partnerships in place to develop initial proofs of concepts for eight financial mechanisms and instruments. These include an impact bond; project facilitation fund; viability gap mechanism; integrated biodiversity, carbon, and social impact credit; rewilding credit; and custodian credit. We also initiated the strategy to form a for-profit entity using our technology to help companies measure their impact on biodiversity, carbon, and people.

In
2023

the Nature Finance team:

- **Developed a Nature Finance strategy** in consultation with market stakeholders.
- **Developed 8 capability concepts** underpinned by the portal.
 - i. Revenue Focused. 5 Credit Instruments: Integrated (Biodiversity, Carbon, and Social Impact), Custodian, Regenerative Agriculture, Rewilding, and Single Species.
 - ii. Investor Focused. 2 Impact Investment Structures: Biodiversity Impact Bond (BIB), and Biodiversity Facilitation Fund (BFF).
 - iii. De-risking/Bankability Focused. Biodiversity Viability Gap Mechanism (BVGGM) to offer credit enhancement, de-risk, and develop a bankable project pipeline.
- **Defined approaches to market test the above:**
 - Use cases identified and partnerships initiated or strengthened: Laikipia Conservancies Association (LCA), Kenya; Lion Landscapes, Kenya; University of Oxford WildCRU; Tiger Bond UNDP; Orcka.
 - Partnership with Social Carbon to develop a proof of concept for a robust carbon, biodiversity, and social impact credit.
 - A post-doc on Innovative Finance with Leverhulme Centre for Natural Recovery, University of Oxford initiated.





For
2024
 our goal is to:

- **Partner with diverse stakeholders** to develop the above financial mechanisms, including financial institutions, multilateral organisations, biodiversity investors and buyers, “standards” organisations and donors.
- **Identify funders** for each financial mechanism and help develop bankable structures for use cases.
- **Work with scaling partners** for the three mechanisms and at least three credit instruments (Integrated, Custodian, Rewilding) and initiate the testing phase.
- **Leverage the post-doc collaborations** with the University of Oxford to market-test our mechanisms through the academic and professional network.
- **Develop a biodiversity and social impact standard** in collaboration with Social Carbon and market-processes for each instrument.
- **Roadshow and market our mechanisms** at international forums with partners, including the Biodiversity COP.
- **Work closely with Impact Monitoring and Education teams** to market and launch an integrated **NATURAL STATE** Nature Finance solution.

EDUCATION

Creating a pipeline of leaders and practitioners to scale nature restoration across Africa

We believe education and networking are key to creating the skilled people and collective learning needed to grow and innovate the sector. Our Education team is working with partners to create “The African Centre for Nature Restoration” - together we aim to build capacity by creating a network of restoration professionals across Africa who are capable of restoring degraded land at scale and who will lead change in - and for - their communities.

The African Centre for Nature Restoration will become a vibrant centre of excellence, providing leaders and practitioners across Africa with access to the latest knowledge and best practices in biodiversity restoration. We will offer both onsite and online professional training courses, focusing on the skills needed to plan, finance, deliver, and evaluate large-scale biodiversity restoration projects. The vast majority of nationals cannot afford training, so we will launch a Restoration Leaders Bursary fund to enable their access to these opportunities, ensuring a greater than 60% female participation to address gender inequality in the sector.

The physical training facility will be in the vast landscapes of North Kenya. Here, our trainees will have unparalleled access to field-based learning across savannahs, montane and tropical forests, and wetlands. A key part of our offering will be trainee networking to catalyse knowledge sharing, collaboration and innovation in the sector. Our trainees will network with each other and future trainees via our alumni programme and be plugged into an online global community of restoration practice.

In
2023

the NATURAL STATE Education team has:

- **Developed overall strategy, learning approach and curriculum** for “The African Centre for Nature Restoration”.
- **Develop partnerships with the African Leadership University, AgWild and Borana Conservancy** for collaboration on courses, centre development and technical course content
- **Formed a collaboration with the Wildlife Research & Training Institute of Kenya** to share training and centre design expertise.
- **Created a partnership with WildTeam** to share their expertise on adult learning and their online conservationist networking community “WildHub.”
- **Commenced development of the first two best practices and courses.**



“

Integrating biodiversity, carbon and social impact measures enables funding to be channelled to projects that are delivering real, sustainable benefits for nature, climate and people.”

MARGARET NJUGUNA
FIELD RESEARCHER
NATURAL STATE

For

2024

the the NATURAL STATE Education team will:

- **Complete the development of the first two best practices and courses and commence an additional two.**
- **Design the trainee selection and admissions process.**
- **Design and launch the Restoration Leaders Bursary Fund.**
- **Recruit the first cohort** for course one and deliver the online section of the course.
- **Support local community members in planning an Indigenous and local community nature restoration knowledge hub in Kenya linked to the centre.**
- **Complete the Phase 1 of the Centre's build.**
- **Design a sustainable funding model** for the Centre.
- **Develop a pan-Africa scaling strategy.**
- **Develop a pan-Africa scaling strategy.**



WE BELIEVE

in making nature finance easier to access
and more equitable for the custodians
of nature on the ground.



FUNDRAISING

To **DATE**

we have raised \$6 million from Good Energies, TNC, UBS Optimus Foundation, Rolex, Google, and many generous private individuals.

In **2024**

we will increase our fundraising efforts, supported by a series of amazing short films, detailed concept notes, and an expanded fundraising team. We aim to raise a minimum of \$6 million per year for the next three years.



COMMUNICATIONS

In **2023**

we completed our brand identity and built out our social media channels, including Instagram, LinkedIn, X, Facebook, and YouTube. We also commissioned a series of films to help illustrate the work our team is doing on the ground.

In **2024**

we will grow our social media presence, expand our presence in print media, launch our short films, and have a major press launch for a formal opening of our carbon and biodiversity lab. We will also do a press launch for the biodiversity credit we are developing with the University of Oxford and the Paul G. Allen Family Foundation. In addition, we will present our work at several international workshops and conferences, such as the Skoll World Forum.

OPERATIONS

Supporting our team with a high-performing operations function



In 2023

we focused on building our Operations team, creating solid policies, and expanding our infrastructure in Kenya. We recruited our Vice President to oversee all Operations, a Global Head of Operations, a Financial Controller, and an H.R. and Research Centre Manager. We have also focused on getting all the policies in place that will support the smooth running of the organisation and enable us to attract funding from multilaterals and bilaterals. We expanded our infrastructure by building a carbon lab at the **NATURAL STATE** Research Centre.

In 2024

we will finalise our policies and their operationalisation, including establishment of supporting I.T. systems and team training. We will also hire an additional full-time accountant and administration and procurement staff to be based at the **NATURAL STATE** Research Centre.



THE TEAM

DURING the past year

we hired 14 additional posts and now have the base team to enable us to scale. Their full bios can be found on our [website](#).

- Ruwaydah Abdul-Rahman,
Head of Fundraising
- Samuel Gachuhi,
Junior Data Scientist
- Alexander Godfrey,
Director of Impact Monitoring
- Peter King'ori,
Financial Controller
- William Korosian,
Field Botanist
- Bosco Letruka,
Field Researcher
- Amitabh Mehta,
Director of Nature Financing
- Mary Ndiba,
Head of Operations, Global
- Rajchandar Padmanaban,
Geodata Scientist
- Matt Rogan,
Data Scientist
- Seleina Shurake,
HR and Research Centre Manager
- Lucy Smyth,
Program Officer
- Ross Tyzak Pitman,
Head of Technical Delivery
- Nzuki Waita,
Vice President

In 2024

we will hire an accountant, a Field Implementation Lead, two Field staff, and a Communications Officer.



PARTNERSHIPS

Collaborations that accelerate impact on nature.

We aim to work with global leaders in their fields, whether corporates, NGOs, landscape partners, or academic institutions. In 2023, we expanded our strong network of partners now including:

Academic Partners: We are working with best-in-class academic institutions.



Landscape partners: Our trusted landscape partners enable our teams to research over hundreds of thousands of acres and to pilot financial products.



Operational partners: We have developed focused partnerships to bring together specific areas of expertise.



Financial supporters: Our progress to date would not have been possible without our financial supporters. We also thank our anonymous donors.



Professional memberships:





Dulma Clark

NEW BOARD MEMBERS

We are thrilled to introduce our newest board member, Dulma Clark, with diverse work experience spanning various organisations and roles. In 2019, she worked as an Intrapreneur at Vivobarefoot until July 2020, when she transitioned to Head of the Livebarefoot Fund. Dulma also joined the Nexus Global Summit as a Member in July 2019 and The Conduit as a Social Enterprise Member in February 2019. In 2020, she became a Member of the Steering Group at the Devon Environment Foundation. Additionally, Dulma has served as a Board Trustee at the JA Clark Charitable Trust since November 2013. Dulma has experience as a Director at SOUL OF AFRICA, and in 2014, she worked as a Project Monitoring and Evaluation Consultant at Global Giving U.K. Dulma has further contributed as an Advisor at Save Lake Baikal. Before that, she worked as a Legal Advisor at the Peoples' Friendship University of Russia, The Student Law Clinic.

THANK YOU

Thank you to all our supporters who have made this work possible. We would like to thank Good Energies, Rolex, TNC, UBS Optimus Foundation, Google, EY, and our highly generous anonymous donors. As a team, we are incredibly grateful for your support and this fantastic opportunity to transform the restoration sector. We have built the basic physical and legal infrastructure for **NATURAL STATE** and assembled a fantastic team. In 2024, we look forward to demonstrating our revolutionary impact monitoring technology and systems, our innovative financial mechanisms for nature, and our new educational facility. We will also identify our partners with whom we will rapidly scale our efforts in 2025. Thank you again to all our supporters.



NATURAL STATE

Restoring the Natural World

www.naturalstate.org

