

Strategic Science & Restoration

The Gorongosa Model

September, 2026

Science at the Centre of Restoration

The Gorongosa Project has been recognized by National Geographic as the “most successful wildlife restoration in Africa”. This distinction is not an accident of geography or traditional conservation but the result of a deliberate, science-centric architecture. Since the landmark 2008 co-management agreement between the Government of Mozambique and the Greg Carr Foundation, we have operated on a foundational mandate: that rigorous biological research is the primary engine for ecosystem recovery and regional stability. Science here is not a peripheral academic luxury; it is the vital diagnostic tool that ensures our restoration efforts translate into long-term ecological resilience and the tangible well-being of the Mozambican people.



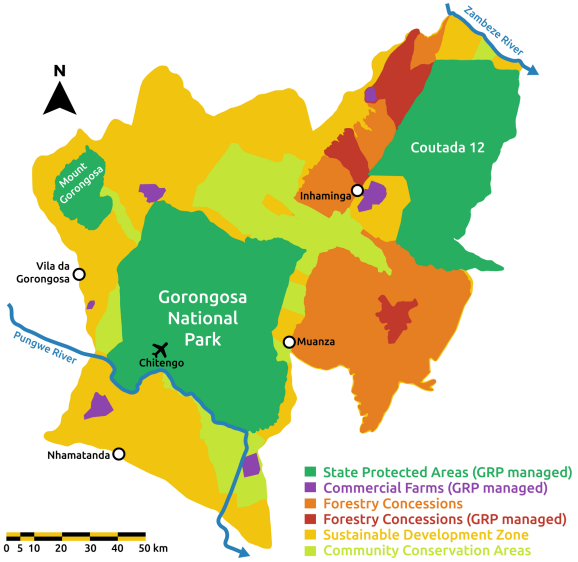
This high-level vision is given physical form through our operational anchor at **Chitengo** where we have built a research environment capable of supporting world-class discovery.

The Dual Mandate Vision Our “Dual Mandate” represents a strategic harmony between ecosystem conservation and the advancement of human well-being. We reject the legacy model of “fortress conservation” that isolates parks from people. Instead, we treat conservation as a driver of regional economic health. By embedding high-level research infrastructure within the park, we create a synergy where biodiversity protection directly informs agricultural productivity, public health, and education. This prevents the Park from becoming an island of biology; it becomes the heart of a regional economic engine.

The Gorongosa Map of Life The strategic core of our management is a comprehensive biodiversity inventory. This dataset is the mandatory baseline for every management intervention, from predator reintroductions to reforestation.

Total Species Documented	>8,000 species identified across the Greater Gorongosa landscape.
Species New to Science	~200 discoveries, including endemics like *Afroedura gorongosa*.
Strategic Utility	Provides the essential baseline for protection, restoration, and long-term monitoring.





Gorongosa National Park covers 408,600 hectares in central Mozambique, south of the Zambezi River, with a 533,300-hectare Sustainable Development Zone. Located at the southern end of the Great Rift Valley, it is one of Africa's most biodiverse and productive ecosystems, supported by fertile soils, high rainfall, flooding and diverse habitats.

Gorongosa Mountain (1,863 m) was declared part of the Park in 2010; it contains rainforests and Afromontane grasslands and is a vital water source for both local communities and the Park.



Mozambican Civil War (1977-1992)

Large-scale decimation

Historically, Gorongosa had some of Africa's highest densities of large wildlife. Wildlife populations declined by **over 85–99% between 1972 and 2000** due largely to the civil war and its aftermath.

Restoration began in the early 2000s and accelerated after 2004 through the **Carr Foundation** and, from 2008, a public-private partnership with the Government of Mozambique. By the 2020s, several species had shown significant recovery, including waterbuck, elephant, buffalo, hippo, and lion, while zebra and some other species remained critically depleted.

Gorongosa Restoration Project

Aerial Counts every 2 years

Species	1972 estimate	2000 estimate	Civil War Loss	2024 count	GRP Recovery
Buffalo	14 000	< 100	> 99%	1 958	13.99%
Elephant	2 500	< 200	> 92%	873	34.92%
Hippo	3 500	< 100	> 97%	1106	31.60%
Waterbuck	3 500	< 300	> 91%	65 332	> 100%
Zebra	3 500	< 20	> 99%	68	1.94%
Wildebeest	6 500	< 20	> 99%	1 519	23.37%
Sable	700	< 100	> 86%	331	47.29%
Hartebeest	800	< 100	> 88%	497	62.13%
Lion	200	?	?	255	> 100%



Scientific Services at Gorongosa

The Science Department

The Operational Anchor: The E.O. Wilson Biodiversity Laboratory

The E.O. Wilson Biodiversity Laboratory is the strategic headquarters of our restoration mission. It provides an environment for advanced scientific inquiry that rivals premier global academic institutions, shifting the conservation paradigm from basic field observation to high-resolution molecular and evolutionary science.

Molecular and Genetics Laboratory

Facilitates field-based DNA extraction, PCR amplification, and genetic sequencing. This allows for real-time genomic analysis and disease surveillance without the logistical delays of sample exportation.

Biological Synoptic Collections

Africa's first park-based, permanent collection utilizing a barcode specimen tracking system. It serves as a physical and digital archive for international verification and taxonomic research.

Ambient Lab for Experimental Work

A specialized facility dedicated to controlled experiments with living specimens, allowing researchers to test ecological hypotheses in a setting that bridges the gap between the wild and the bench.

PaleoPrimate Project Gorongosa

Laboratories housing fossils and artefacts discovered across the Greater Gorongosa Ecosystem, and spanning multiple time periods, that provide the deep-time context of the East African Rift System.



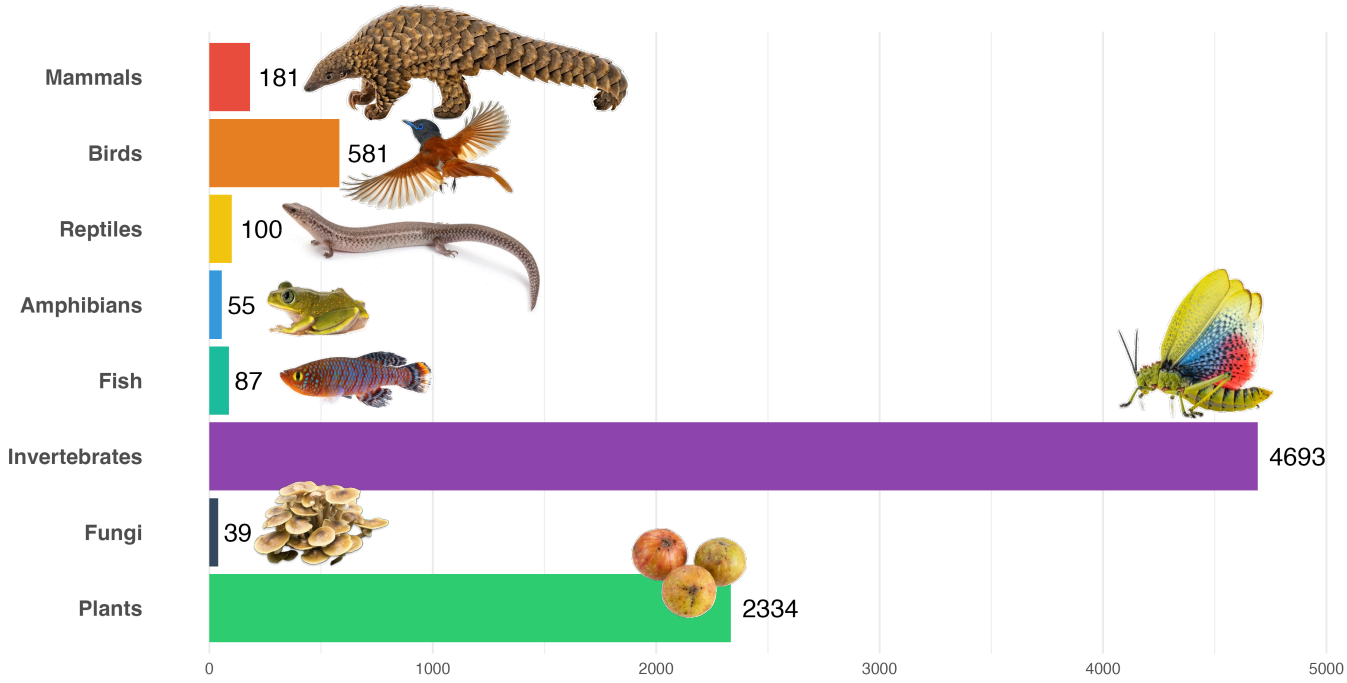






Biodiversity of Gorongosa

The current state of knowledge – 8,070 spp. (June 2026)



Approximately **200 new species for science** already found in Gorongosa



From knowing *what* lives in Gorongosa to understanding *how* it works: transforming Africa's most comprehensive biodiversity baseline into an **engine for ecosystem restoration**





From the lab to the field and back

Applied Management

Vision | To be the scientific engine of a world-class, restored ecosystem, where cutting-edge research empowers human prosperity, secures biodiversity, and inspires the next generation of conservation leaders.





Mission | To serve as the operational anchor for Gorongosa by delivering actionable data, fostering Mozambican scientific leadership, and pioneering evidence-based solutions that harmonize conservation with community well-being.



The laboratories function as a proactive management tool



Human-Wildlife Conflict Taskforce Under the leadership of Dr. Dominique Gonçalves, the new HWC Taskforce is scaling up proactive mitigation strategies and staff training for 2026 to protect local communities and foster peaceful coexistence with wildlife.



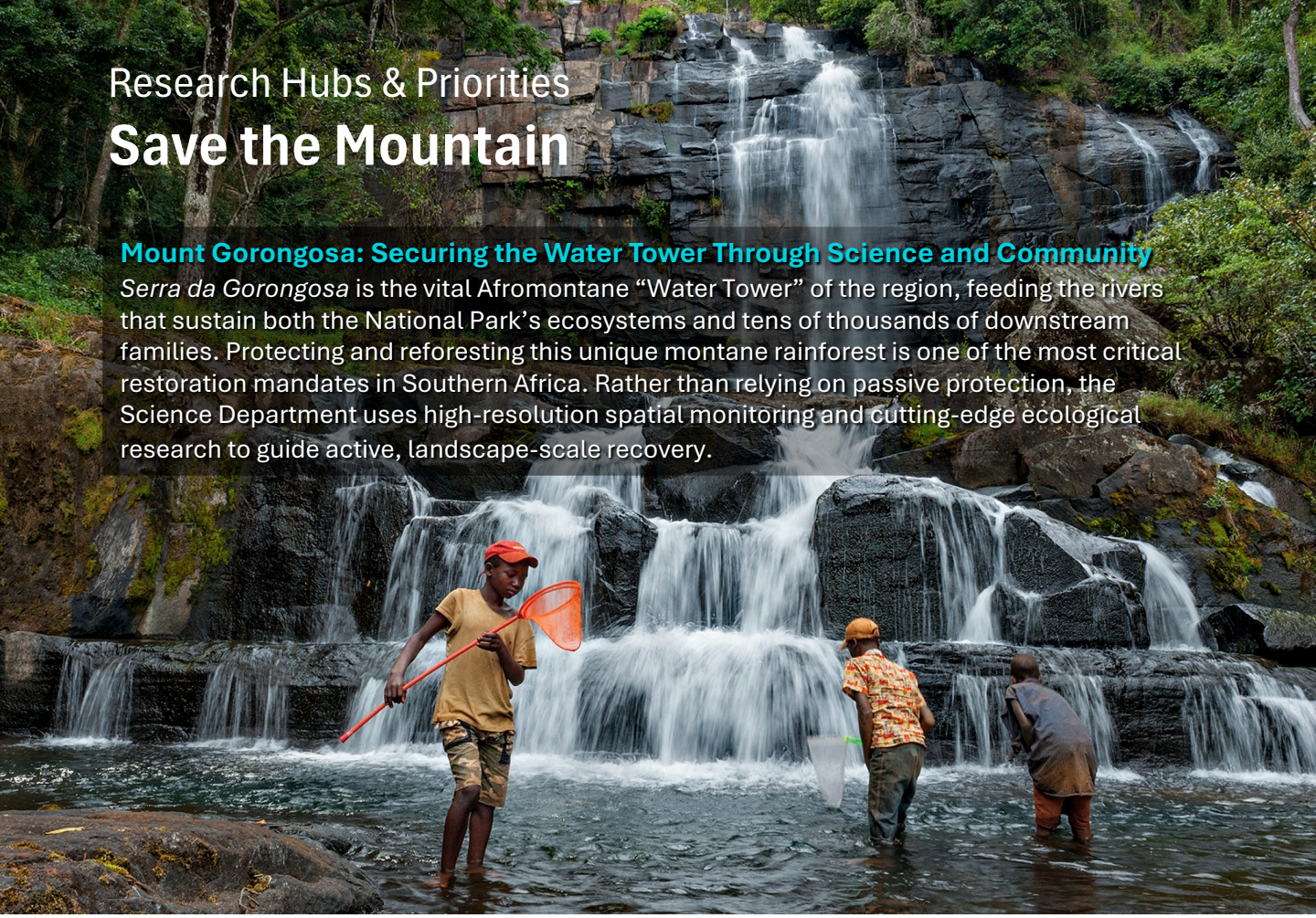
Elephant Ecology Project (EEP)
This flagship initiative continues to pioneer critical research on elephant behavior, population dynamics, and ecosystem recovery, utilizing data-driven insights to guide conservation action and human-wildlife conflict solutions in the Park.

Research Hubs & Priorities

Save the Mountain

Mount Gorongosa: Securing the Water Tower Through Science and Community

Serra da Gorongosa is the vital Afromontane "Water Tower" of the region, feeding the rivers that sustain both the National Park's ecosystems and tens of thousands of downstream families. Protecting and reforesting this unique montane rainforest is one of the most critical restoration mandates in Southern Africa. Rather than relying on passive protection, the Science Department uses high-resolution spatial monitoring and cutting-edge ecological research to guide active, landscape-scale recovery.



Our long-term ecological monitoring provides the empirical baseline necessary to reverse historical habitat loss and target interventions with surgical precision:

➥ **Tracking Forest Dynamics**: High-resolution satellite assessments reveal a 53% reduction in original montane forest cover since 1977, leaving under 6,000 hectares of primary forest.
➥ **Identifying Intervention Hotspots**: Satellite data maps real-time forest clearing, giving our restoration teams exact spatial coordinates for active rewilding and protection efforts.
➥ **Restoring Connectivity**: Fragmentation has reduced the average forest patch size to 2.3 hectares. Understanding these spatial dynamics allows us to strategically reconnect isolated fragments, mitigating edge effects, fire risks, and slope instability.



Shade-Grown Coffee Agroforestry (SAFs) creates a vital ecological and economic buffer around remaining primary forest. By maintaining a canopy structure that shelters forest-dependent birds, butterflies, and amphibians, SAFs align biodiversity conservation directly with local livelihoods.



Chemically Rich Reforestation (CRR) uses native tree species like *Erythrina lysistemon* and *Ekebergia capensis*, whose natural chemical defenses protect seedlings from pests and environmental stress. This approach restores complex, resilient food webs far faster than passive regeneration.

Evolutionary Science
and Cultural Heritage

Safaris in Deep Time

Gorongosa serves as a unique window into human origins. Situated at the **Urema Rift**, the terminus of the Great Rift Valley, the park provides a rare geological record that links modern ecology to the deep history of our lineage.



The PaleoPrimate Project The discovery of the first Miocene fossil sites in the Urema Rift has established Gorongosa as a global center for evolutionary research. The PPP investigates Gorongosa's Miocene coastal paleoenvironments, Quaternary caves, and ape evolution, positioning Mozambique as a key node in the global narrative of hominin evolution.



Mechanisms of Rapid Evolution The Park has become a world-renowned case study for rapid evolution. Our research on the "tuskless elephant" phenomenon (published in the journal *Science*) demonstrated how intense historical poaching served as a powerful selective pressure, driving observable evolutionary shifts in a single generation. This visibility cements Gorongosa's status as a "living laboratory" attracting the world's top researchers.

The Visitor Experience We translate this high-level science into high-value cultural heritage tourism through **Safaris in Deep Time**. By allowing visitors to engage with the terminus of the Great Rift Valley and active paleontological sites, we convert scientific discovery into sustainable revenue that funds further exploration.





MSc, Internships and Workshops

BioEducation

Gorongosa functions as a **Global Education Engine**, prioritizing the training of Mozambican scientists to ensure that the Park's future is led by local experts with world-class credentials.

The long-term survival of African biodiversity depends on a strong, highly skilled generation of local scientists, wildlife managers, and educators. The **BioEducation Programme** serves as the educational engine of the Science Department, transforming Gorongosa National Park into a living academic campus that bridges global scientific excellence with Mozambican talent.

Graduate degree *in situ*

Gorongosa offers **Africa's only Park-based Master's in Conservation Biology**, combining university-level training with hands-on fieldwork in a protected ecosystem.

➥ **Academic Consortium:** Universidade Lúrio, Universidade Zambeze, ISPM, and the University of Lisbon.
➥ **Growth & Reaccreditation:** Simons Foundation grant supported curriculum revision and reaccreditation.
➥ **National Impact:** 48 students have graduated, with alumni working in Mozambique's national parks, universities, government, and doctoral programs. **Six graduates currently work at Gorongosa** in science and research roles.

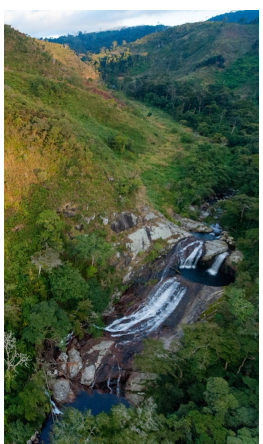
Scholarships & Academic Pathways

Gorongosa helps promising Mozambican students access higher education and international research opportunities.
PhD & Traineeships: Ten MSc alumni have secured PhD fellowships in Portugal and South Africa, alongside international technical traineeships.

Hands-On Internship Program

Gorongosa offers intensive internships for recent graduates and local youth. In 2026, **six interns** received **over 200 hours** of specialized mentorship in molecular biology, field zoology, herbarium management, and GIS. The **Marc Stalmans Science Scholarship** provides full university scholarships after high school students finish their internship with us.











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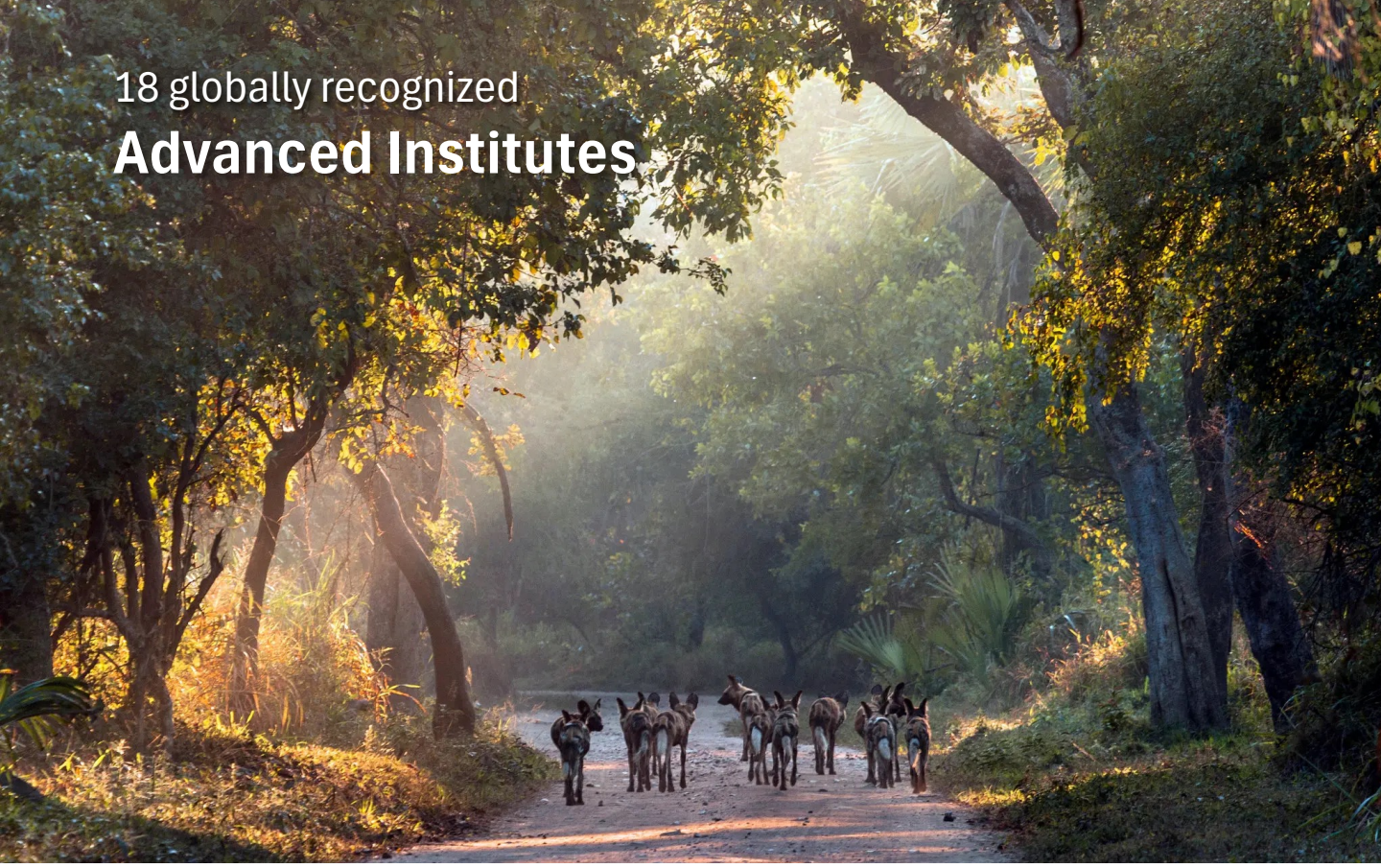
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Senckenberg Biodiversity and Climate Research Centre (Germany)
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South African Institute for Aquatic Biodiversity (South Africa)
The Natural History Museum (UK)







"The Gorongosa Project uses a science-based approach to managing ecosystems to protect biodiversity and to create sustainable human development, while adding to the world's knowledge through discovery, including the greatest story on Earth: human evolution. Science is the centre"

— G. Carr

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