

History of the Aberdare Fence



The Aberdares are vital to Kenya – a unique montane forest ecosystem in a country where just over two percent of the land is still covered by closed canopy forest. Spanning over 160 km just north of Nairobi, the Aberdares provide invaluable services in support of the nation's economic development, human well-being and long-term environmental stability.

A unique ecosystem

Four out of seven of Kenya's largest rivers, flowing north, west, east and south, rise in the Aberdares. They provide power and water to seven major towns – including to over three million people of Kenya's capital city, Nairobi. On the foothills of the Aberdares, 30% of Kenya's tea and 70% of its coffee are produced. Four million farmers depend on its rich soils and rainfall. The Aberdares are home to diverse species of wildlife, many of conservation interest – from elephant, giant forest hog, rhino and leopard to the critically endangered mountain bongo: a valuable and popular tourism asset for Kenya.

Over the years, the increasing human population in the prime agricultural land surrounding the Aberdares meant that farming activity was being conducted right up to the national park and forest reserve boundary. Regular crop damage by wildlife, especially elephant, was a major problem for the farmers, who suffered great losses. Encounters between farmers and wildlife occasionally led to human fatalities, and served to heighten tensions between humans and wildlife.

At the same time, the wildlife and forests of the Aberdares faced numerous threats arising from human activities, including poaching, bush-meat hunting, snaring, illegal logging, charcoal burning and encroachment. By the 1980s, these activities had decimated the wildlife population, almost wiping out the black rhino in particular.

Early beginnings with a long-term vision

Committed to saving the dwindling rhino population in the Aberdares and seeking solutions to the human-wildlife conflicts around the National Park, conservationist Ken Kuhle established the Rhino Ark Kenya Charitable Trust in 1988 with the objective of building a 38 km game-proof electric fence around the Park Salient jutting out into the farms around Mweiga. His background in engineering, coupled with his skills in farming and passion for conservation, positioned Ken well to ensure that the design for the fence would achieve its objectives.

What was originally a 38 km fence along the Park Salient of the Aberdares became, over 21 years, the world's longest conservation fence, nearly 400 km in length, protecting over 2,000 sq. km of prime forests and water catchments, often referred to as the Aberdare Conservation Area.

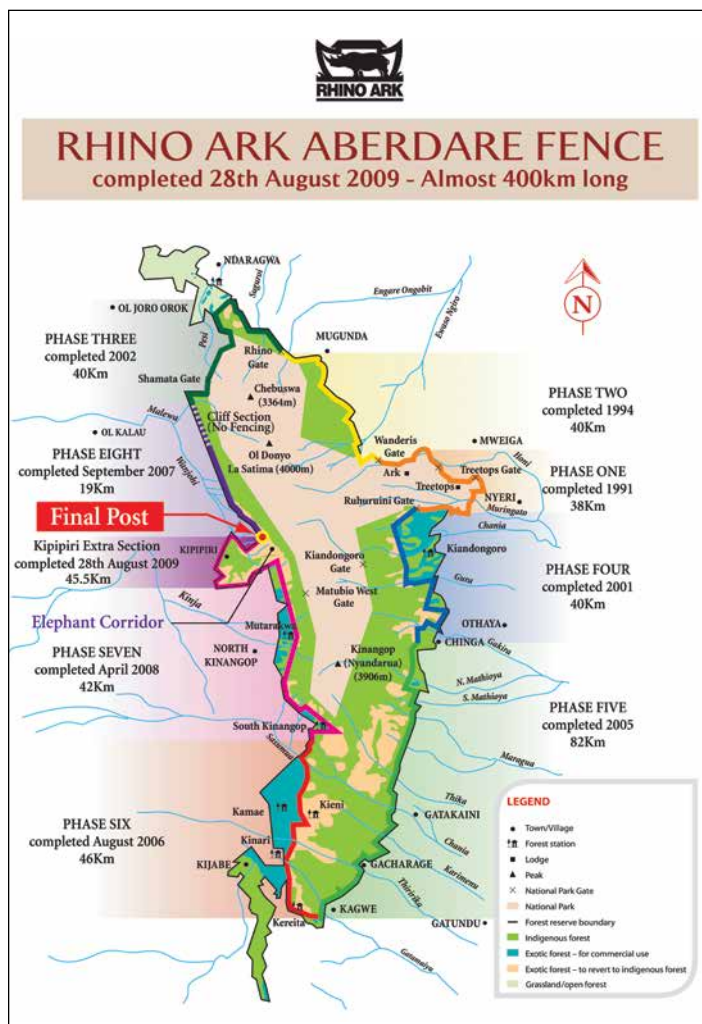
The fence rises seven feet above ground. It is electrified and wired down to three feet below ground (to deter burrowing wildlife) and the upright posts are hot wired to deter baboons and monkeys from scaling them.

Completion of the fence – proving a foundation for sustainability

The fence – completed in 2009 – was built in nine phases which were launched by Kenyan key personalities, including the late Nobel Peace Prize Laureate Wangari Maathai, Minister for Finance Amos Kimunya, and Minister for Forestry and Wildlife Noah Wekesa. The fence was formally commissioned by President Mwai Kibaki and Prime Minister Raila Odinga in March 2010.

The President recognized the fence as an invaluable investment protecting water catchments, pristine mountain forests and an area of rich biodiversity – as he noted that:

"Our great mountain forests are the 'water towers' and the 'lungs' of our beloved Kenya. They and the precious flora and fauna within them must be sustainably managed and conserved for all Kenyans and as a global heritage for all time."



Impact of 30 years of Conservation



Most of Kenya's forests are in mountain areas – in Mount Kenya, the Aberdares, the Mau complex, the Cherangani Hills, and Mount Elgon. They are known as the 'water towers' of Kenya, forming the upper catchment of all main rivers of Kenya. The water towers are vital national assets in terms of climate regulation, water storage, recharge of groundwater, river flow regulation, flood migration, control of soil erosion, and conservation of biological diversity. They are Kenya's single most important source of water for direct human consumption and for industrial and farming activities. The majority of Kenyan livelihoods depend in some way on the rivers, climate, forest and wildlife of these mountain ecosystems. They also help mitigate the impacts of climate change, such as flooding. The protection of these forested areas is a national necessity.

Since its establishment in 1988, Rhino Ark has been spearheading and is implementing fencing and conservation interventions in Kenya's water towers, in particular in Mt. Kenya, Aberdares and the Mau Forests Complex. To date, over 80,000 households benefit from the protective functions of the 620 kilometres of electric fences built to date. These fences are instrumental as a management tool in addressing key challenges affecting these mountain forests: (i) regular crop damage and occasionally human fatalities caused by marauding wildlife, especially elephant; and (ii) threats arising from human activities, including poaching, bush-meat hunting, snaring, illegal logging, charcoal burning and encroachment.

Rhino Ark activities have expanded rapidly since the early days, as has the need to protect the black rhino and reduce human-wildlife conflict. What was originally a 38 km fence along the park salient of the **Aberdares** became – over 21 years – the world's longest conservation fence, nearly 400 km in length, protecting over 2,000 sq km of prime forest and water catchment, now called the Aberdare Conservation Area. The electric fence, rising seven feet above the ground and wired down to three feet below ground, was completed in 2009. It was formally commissioned by President Mwai Kibaki and Prime Minister Raila Odinga in March 2010.

In March 2013, Rhino Ark started an integrated conservation project in the **Mount Eburu ecosystem**, in the Mau escarpment, with a comprehensive electric fence around the entire protected forest of nearly 9,000 hectares. This natural forest, rich in biodiversity, is home to over 40 species of mammals, including the critically endangered Mountain Bongo antelope. However, surrounded on all sides by human settlement, and impacted by illegal logging and charcoal burning, the forest cover had been seriously degraded and the wildlife decimated by bush meat hunting. Another fence – drawing on the experience of the Aberdare fence – was an obvious solution and, with private sector support, the 43.4 km long fence was completed in November 2014.

Mount Kenya, the third project to be tackled by Rhino Ark, in partnership with the Kenya Forest Service and the Kenya Wildlife Service, was designated as a World Heritage Site by UNESCO in 1997.

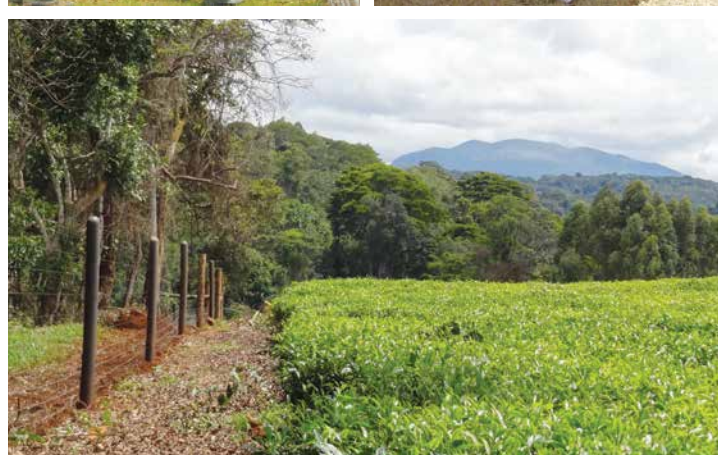
Mount Kenya's forests are rich in biodiversity, not only in terms of ecosystems but in terms of species. It also plays a critical role in water catchment for the entire country – including the Ewaso Nyiro and the Tana River, Kenya's largest. However, it has faced daunting challenges, with dense forests next to some of the most populated areas of the country. Regular crop damage – particularly by elephants – is a major problem for farmers, sometimes leading to human fatalities.

Based on the experience of the Aberdares, it was decided to build an electric fence around Mount Kenya – a fence that would be even longer than the Aberdare fence, at 450 km in length. Work was started in September 2012 and, as of October 2018, 180 km have been completed.

The lessons learned from the successful fencing projects undertaken for Aberdares, Mount Eburu and Mount Kenya have opened up other forested areas for fence protection. These now include the **South Western Mau** and possibly the **Kakamega Forest** in western Kenya.

Building a fence is one part of the equation. **Equally, fences need to be maintained and protected.** In the Aberdares, parts of the fence are over 20 years old and have to be replaced. Vigilance, too, is a crucial part of fence management. Working with its partners, Rhino Ark conducts ground and aerial patrols and surveys of the forested areas it covers – identifying illegal activities and taking remedial action as necessary. Engaging local communities has been an essential part of Rhino Ark strategy – both to guard and protect the fences. Schools, on the periphery of the fences, are involved in bringing home to pupils and students the necessity of conserving Kenya's natural and national heritage. Initiatives such as the community livelihoods platform in Eburu provide value and inspiration to forest-adjacent communities.

For all this activity – building, maintaining and protecting – **the funds raised by the Rhino Charge can be used flexibly** and are not restricted to a particular part of the project. They are therefore essential for the long-term benefit of Rhino Ark, and ultimately for the future health of Kenya itself. The work is essential – and every contribution to the Charge plays its part in supporting the work of Rhino Ark.



Impact of 30 years of Conservation



The true impacts of the conservation effort implemented by Rhino Ark

In 2010, Rhino Ark commissioned an independent study on the environmental, social and economic assessment of the fencing of the Aberdare Conservation Area. The study was co-funded by UNEP, Rhino Ark and Kenya Forests Working Group and supported by the Kenya Wildlife Service, the Kenya Forest Service and the Greenbelt Movement.

Ecological benefits

The study revealed **key positive outcomes attributable to the fence**, including improved forest cover, safer living conditions for local communities and greater security for wildlife. It affirmed that the fence has been instrumental as a management tool in addressing the challenges that were affecting the Aberdare ecosystem. Specifically, the study revealed:

- a 20.6% increase in forest cover between 2005 and 2010;
- a 54% decrease in open areas (grassland and cultivation) inside the now fenced 2000 km² Aberdare Conservation Area;
- and a 47% increase in exotic plantations outside the fenced area.

Data indicates that the Aberdares' rivers are "more stable than the Mount Kenya rivers" — a fact it attributes to better land cover in the ecosystem. The report's economic analysis gives a breakdown of identifiable benefits provided by the Aberdares to many parts of Kenya. The value of providing domestic water supply to central Kenya, parts of the Rift Valley and the Tana River valley, for example, is estimated at KES 646 million (US\$ 6.9 million) annually. For Nairobi, where almost all the water supply comes from above and below ground Aberdare sources, the value given is KES 1.46 billion (US\$ 15.6 million).

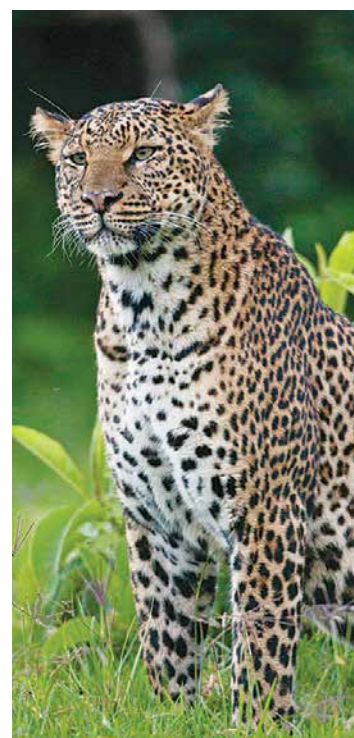
On carbon sequestration and soil erosion control, the report assesses the annual value at just under KES 1.9 billion (US\$ 20.3 million). Carbon credits account for KES 450 million (US\$ 5 million) annually.

Socio-economic benefits

The study recorded socio-economic effects, such as higher household incomes and land values (as high as 300% in some cases) due to improved farmland security, crop yields and safer living conditions.

Wildlife crop destruction has been all but eliminated and children travelling to school face fewer risks from animals. In addition, cattle rustling using the forest as an escape route has ceased and disease transmission between wildlife and livestock has greatly reduced.

In addition, the study's economic analysis highlighted the importance of the environmental services that are protected by the fence and that serve key national and global interests. The study estimated the **total values of products and environmental services provided yearly by the fenced ecosystem at KES 63 billion with an additional KES 32 billion for biodiversity conservation**, amounting to an overall total of KES 95 billion.



"The Aberdares conservation efforts underline the extraordinary and wide-ranging returns possible when a more creative, decisive and sustainable approach to managing nature is undertaken—they also offer a model for exemplary public-private partnerships."

Achim Steiner, former United Nations Under-Secretary-General and Executive Director of UNEP.

Importance of Kenya's Water Towers

Most of Kenya's forests are in mountain areas, in particular Mt. Kenya, Aberdares, Mau Complex, Cherangani Hills and Mt. Elgon. These areas are known as the "water towers" of Kenya as they form the upper catchment of all but one of the main rivers in Kenya. Although these "water towers" cover less than 2% of the total land area in Kenya, they provide invaluable services to Kenya's inhabitants, economy and wildlife. They also support transboundary water bodies, underlining their regional and international importance.

The water towers are vital national assets, in terms of climate regulation; water storage; recharge of groundwater; river flow regulation; flood mitigation; control of soil erosion and reduced siltation of water bodies; water purification; conservation of biological diversity; carbon storage and sequestration; nutrients cycling and soil formation. These services support key economic sectors, including: energy, tourism, agriculture (cash crops, subsistence crops, and livestock) as well as water supply to urban centres and industries.

Water to urban centres and industries

The water towers are the single most important source of water for direct human consumption and industrial activities. Most urban areas depend upon their water, in particular the City of Nairobi where over 50% of Kenya's Gross Domestic Product is derived.

Rural livelihoods

The majority of Kenyan livelihoods depend in some way upon the rivers, climate, forest and wildlife of these mountain forest ecosystems. Millions of farmers live on the slopes of these mountains and depend on their rich soils and their micro-climatic conditions that are most favourable for agricultural production.

Wildlife and tourism

The water towers' forests are rich in biological diversity, not only in terms of habitats, but also in terms of species. Although they cover less than 2% of Kenya's total land area, they host a disproportionately high percentage of the flora and fauna species (40% of the mammal species, including 70% of the threatened mammal species, and 30% of the bird species, including 50% of the threatened bird species).

The rivers flowing from the water towers are the lifeline for major conservation areas in the lowlands. These are key tourism destination areas, such as Maasai Mara National Reserve, Lake Nakuru National Park and Samburu National Reserve. These conservation areas host a high diversity of fauna and flora. Some of them are classified as Important Bird Areas as they host a rich avifauna.

Energy

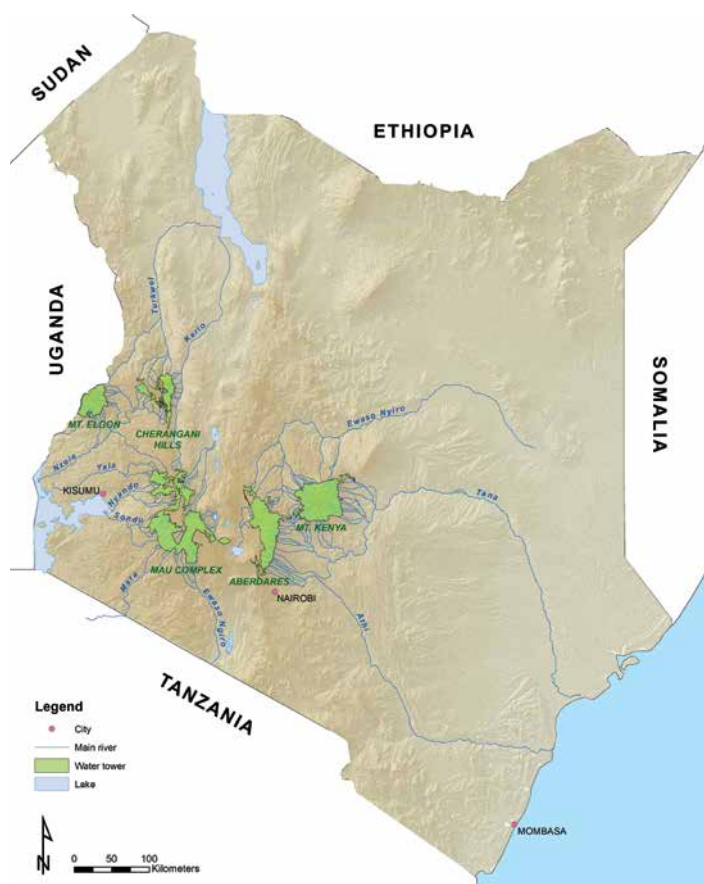
The water towers also provide water to all hydro-power plants that represent 30% of Kenya's total installed electricity capacity.

Kenya's development blueprint

Looking forward, environmental stability and secured provision of ecological goods and services, such as those provided by the water towers, will remain essential to attain sustainable development in Kenya. They are cross-cutting, underlying requirements to achieve the Sustainable Development Goals and Vision 2030 - Kenya's development blueprint aimed at making the country a newly industrializing middle income nation, providing a high quality of life for all citizens in a secure and healthy environment.

The water towers and their forest ecosystems are fully recognized as a key component of the economic, environmental and social pillars. In recognition of their importance in socio-economic development, the rehabilitation of the five water towers is one of the flagship projects in the Vision 2030.

In this context, Rhino Ark is firmly on the ground in the three largest of the five main water towers to address the conservation challenges in these mountain ecosystems.



Conserving Mount Eburu



Eburu Forest Reserve comprises 8,715.3 hectares of prime indigenous forest area contained within the steep hills, deep valleys and rolling foothills of Mount Eburu.

Overlooking Lake Naivasha to the south east, Lake Elementaita to the North and Lake Nakuru to the North West, the Mau Eburu forest is nestled within the folds of a geologically active volcanic mountain, whose highest peak, Ol Doinyo Eburu, stands 2,820 metres above sea level. The forest which covers 8,715.3 hectares, is fully demarcated with formal title held by the Kenya Forest Service. It is one of the 22 gazetted forest blocks that comprise the Mau Forests Complex water tower.

A precious mountain forest ecosystem

The natural features of Eburu forest, including its diverse forest types, steep valleys, springs and waterfalls make it a precious ecosystem, rich in biodiversity. The forest features a broad variety of indigenous tree species, such as *Prunus africana* (African cherry) and *Juniperus procera* (African pencil cedar), among others. The forest is recognized as a hotspot for birdlife within the greater Mau Forests Complex with 188 species of birds found within the forest and adjacent areas. It is home to over 40 species of mammals, including the critically endangered mountain bongo antelope, of which about 12 animals, representing 10% of its population known to exist in the wild, are thought to survive in this forest. The Bongo Surveillance Programme is a Rhino Ark supported community wildlife conservation initiative which seeks to protect the precious few bongo that remain in Eburu, giving them a fighting chance to survive in their home.

The threats

The Mau Eburu ecosystem is essentially an island, surrounded on all sides by human settlement. Illegal logging and charcoal burning are long-standing and ongoing challenges that, together with wildfires, have critically depleted the forest cover. Indeed, for many years Eburu was synonymous with the illegal charcoal trade in Kenya. Furthermore, over the years, Eburu's wildlife has been decimated by bush meat hunting. Human-wildlife conflict has also been a key challenge facing the forest-adjacent communities, with wildlife invading community farms and causing losses to farmers through crop damage, livestock predation, human injury and in some cases loss of life.

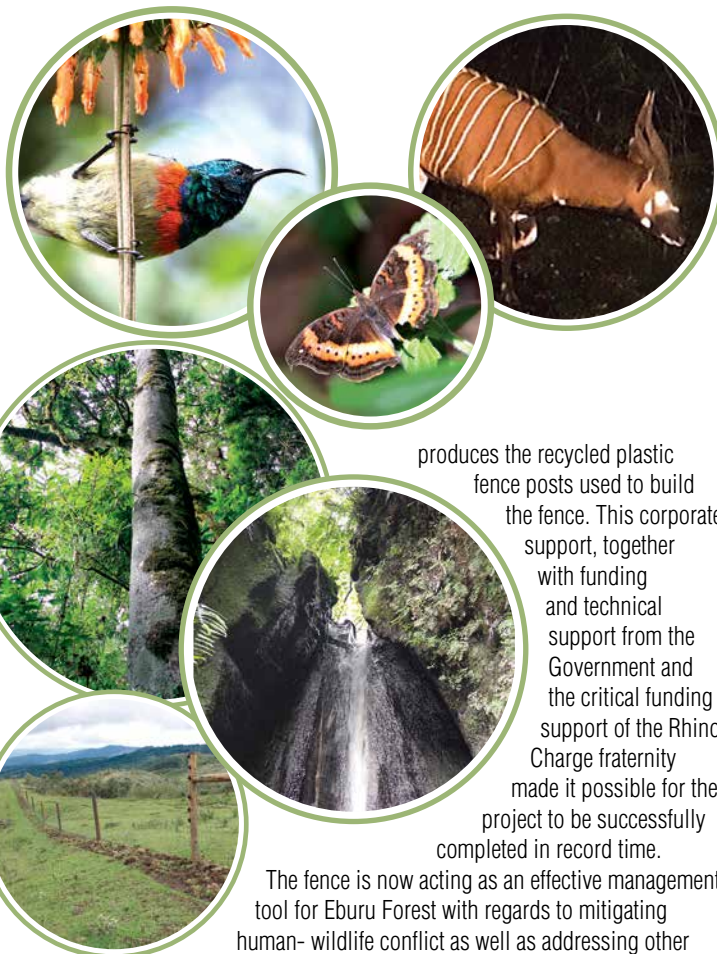
Conserving Mount Eburu

In light of these threats and the importance of protecting Eburu's rich ecosystem, Rhino Ark committed to support and spearheaded a comprehensive conservation initiative, in partnership with the Kenyan Government, to safeguard the future of the forest.

The fencing project

A core component of the conservation initiative was the construction of a comprehensive game proof electrified fence, to address the human-wildlife conflict challenge. The process commenced with the first project stakeholders briefing in November 2011, and thereafter a survey of the 43.3 km fence alignment along the gazetted forest boundary. A comprehensive Environmental Impact Assessment study was then conducted in 2012 which included extensive sensitization meetings with leaders and communities across the entire ecosystem. Following fulfilment of all necessary processes and the approval of the project by the National Environment Management Authority, the construction of the fence commenced on 20 March 2013 and was completed on 24 November 2014.

The fence construction was carried out by a highly experienced team from the Kenya Wildlife Service, with labour sourced from the forest-adjacent communities. Rhino Ark's commitment to fence Mau Mount Eburu has attracted considerable interest from the Kenyan corporate sector, with key funding support for the project received from the MPESA Foundation and Finlays Horticulture. Finlays (now Flamingo Horticulture) also host the facility that



produces the recycled plastic fence posts used to build the fence. This corporate support, together with funding and technical support from the Government and the critical funding support of the Rhino Charge fraternity made it possible for the project to be successfully completed in record time.

The fence is now acting as an effective management tool for Eburu Forest with regards to mitigating human-wildlife conflict as well as addressing other challenges facing the forest, including charcoal burning, wildfires, overgrazing and illegal logging.

Connectivity: the wildlife corridor initiative

Beyond Eburu forest, Rhino Ark has also undertaken to support the establishment of secure a wildlife corridor between the Eburu forest and Lake Naivasha ecosystem. Beyond enabling mobility of wildlife for water between the two habitats, the wildlife corridor has also enhanced the dispersal areas into the wider Eburu ecosystem. This corridor has been secured by establishing an opening in the Eburu forest electrified fence onto a corridor that links the Forest to the lake. It has been made possible through a collaboration between Rhino Ark, government, partners and landowners in the area between Eburu forest and Lake Naivasha. Current efforts are geared towards mobilizing support for establishment of a wildlife overpass on the Moi North Lake Road, which traverses the corridor. The road, which has been upgraded to tarmac is presenting new challenges to wildlife movement due to increased levels of both volume and speed of vehicular traffic. If successful, the overpass will be the 1st of its kind to be established in Kenya.

Community conservation and livelihood initiatives

Successful completion and long term maintenance of the fence has secured the forest and provided an enabling environment for implementation of various community-based conservation and sustainable livelihood initiatives supported by key funding from the MPESA Foundation. These initiatives include support for: (1) Bio-enterprise (with focus on honey production); (2) Implementation of conservation education curricula in 32 forest-adjacent primary and secondary schools; (3) Capacity building of community groups through linkage with agricultural and other experts; (4) Alternative energy solutions to reduce dependency on forest extracted fuelwood; (5) Development and implementation of a participatory forest management plan; (6) Support to the coordination of forest rehabilitation efforts; (7) Community outreach; and (8) Publishing of a guidebook to raise the profile of the forest and help develop it as a key tourism destination, among others.

Conserving Mount Kenya



Mount Kenya, Africa's second highest mountain and Kenya's highest, sits on the equator - 180km north of the capital Nairobi. The purpose of the Mt. Kenya Electric Fence, which will stretch 450km in length, is to bring harmony between nature and the forest adjacent communities and to protect a natural asset of critical importance that supports economic development at national and local levels.

World Heritage site

Mount Kenya is a solitary mountain of volcanic origin which reaches an altitude of 5,199 metres with deeply incised U-shaped valleys in the upper parts. The mountain's natural habitats are protected areas. The moorland and the peak zone (71,500 hectares) received the status of National Park in 1949. The surrounding forest belt, covering approx. 212,000 hectares was gazetted twice, first as Forest Reserve in 1932 and later as National Reserve in 2002.

Designated as a World Heritage Site by UNESCO since 1997 the mountain has been described as *"one of the most impressive landscapes of Eastern Africa with its rugged glacier-clad summits, Afro-alpine moor lands and diverse forests, which illustrate outstanding ecological processes."* Mt. Kenya's forests present a rich biological diversity, not only in terms of ecosystems but also in terms of species, in particular plant species of which 872 have been recorded to date. The area also has a wide variety of fauna with six species of large mammals of international conservation interest, including elephant, black rhino, leopard, giant forest hog, bongo and black-fronted duiker, and twelve species of ungulates.

Mt. Kenya plays a critical role in water catchment for the entire country – including the Ewaso Nyiro River and the Tana River, Kenya's largest river which supplies water to the Seven Forks hydropower stations representing 30% of Kenya total installed electricity generation capacity, as well as to major irrigation schemes, including Mwea, Bura and Tana Delta.

Observed challenges

The boundaries of the protected areas on Mt. Kenya are characterized with dense forest next to some of the most densely populated areas of the country. Such co-existence brings a number of challenges which are unsettling the forest and the people. Regular crop damage, especially by elephants, is a major problem for farmers, and encounters between farmers and wildlife occasionally lead to human fatalities and serve to heighten tensions between them. Unsustainable use of forest resources in areas of high biodiversity result in forest degradation, loss of biodiversity and reduced catchment values.

Indirect impacts from climate change are compounding the increased temperature coupled with reduced cloudiness and rainfall has increased the vulnerability of the forest to fire. In the past decades, there has been a noticeable increase in both frequency and intensity of wildfires in the forest and the moorlands.

Strategic interventions

Launched by Hon. Njeru Githae, Ministry for Finance, on 7th September 2012, the Mount Kenya Electric Fence will encircle over 2,700 sq. km and will be approximately 450 km in length. As of October 2018, over 180 km of the fence has been built.

As one of key principles in all Rhino Ark fences, the Mt. Kenya Electric Fence is being built by members of forest adjacent communities under the supervision of a technical team from Kenya Wildlife Service. The involvement of the local communities creates job opportunities and ensures ownership of the fence project by the neighbouring communities.

Alongside the building of the fence, Rhino Ark supports conservation education projects in local schools, through the establishment of bongo wildlife clubs and the provision of educational materials.

Towards addressing the illegal exploitation of forest resources, Rhino Ark has established a joint aerial surveillance programme. Every three months, field managers from Kenya Wildlife Service, Kenya Forest Service, Mount Kenya Trust and Rhino Ark fly together above the hotspot areas of the mountain to detect emerging issues and assist plan forest protection interventions.

Partners

In addition to the involvement of local communities in the project, Rhino Ark engages with a number of invaluable partners. These include Kenya Wildlife Service, Kenya Forest Service, Ministry of Environment and Forestry, Ministry of Tourism and Wildlife, Treasury, County Governments, Community Development Funds, Upper Tana Natural Resources Management Project, Wildlife Conservation Society, Mount Kenya Trust, Mount Kenya Wildlife Conservancy, Ragati Conservancy, Bongo Surveillance Project, Space for Giants, and British Army Training Unit Kenya.

"The potential benefits of the electric fence are not illusionary. They are a reality, already demonstrated by the 400 kilometers electric fence built around the Aberdare ecosystem."

The experience of the Aberdare fence has provided a management and policy blue print for the protection and sustainable exploitation of our precious 'water towers' which are of critical value to us, and indeed the entire global community. Building on the lessons learned, we are today initiating a similar project for Mt. Kenya."

Hon. Njeru Githae, Minister for Finance, 7 September 2012



Public-Private Partnerships



Cooperation between the public and private sectors is playing a vital role in the success of Rhino Ark's fencing and conservation projects. Rhino Ark builds relationships with local communities, private individuals and corporations along with the National Government, County Governments, Ministries responsible for Forests and Wildlife, Kenya Wildlife Service and Kenya Forest Service, that help preserve Kenya's vital ecosystems and water towers. The Government of Kenya has provided funds for both the building of the Mount Kenya and Mau Mount Eburu fences and is supporting the maintenance of the Aberdare fence through the establishment of the Aberdare Trust. Public-private partnerships are also crucial in the governance, implementation and monitoring of the fencing projects.



The Prime Minister, Rt. Hon. Raila Odinga, hands over the Aberdare Trust document to Rhino Ark Trustee, Dr. Perez Olindo. Looking on are David Mbugua, Director, Kenya Forest Service, and Julius Kipng'etich, Director, Kenya Wildlife Service.

Finance

Until 2011, private contributions formed the majority of Rhino Ark's financial capabilities, with the Rhino Charge contributing up to USD 1 million annually. As Rhino Ark expanded its work to Mount Kenya and Mau Mount Eburu and upped the pace of its activities, greater public funding came on board as the Government of Kenya acknowledged the importance of the work being undertaken.

The former President H.E. Hon. Mwai Kibaki declared the fence an invaluable investment "which should be secured and maintained". The Government of Kenya has committed KES 200 million a year for the next five years to finance the construction of the Mount Kenya fence. The public-private financing partnership has the benefit of sharing responsibility for the fence, broadening public engagement and improving financial sustainability.

Governance

The Aberdare Trust is a public-private partnership launched to maintain the Aberdare fence. The Trust involves Rhino Ark, the Kenya Wildlife Service, the Kenya Forest Service and the local communities who now have a legal framework to participate in its maintenance and all governance issues pertaining to the fence. The Trust will maintain and manage the fence and ensure that the fence objectives are met. Functioning as a partnership, the Aberdare Trust will benefit from increased legitimacy as well as greater levels of transparency and accountability.

"We will find a solution which will continue to enrich both the fence edge communities and the wider national and international public who benefit from a much more stable Aberdares today."
Dr. Perez Olindo – Rhino Ark Founder Trustee – 11 May 2012



Implementation

The construction of the fence is only possible with the support of local communities. They provide the labour for fence building while the Kenya Wildlife Service oversees construction. The local communities are also vital for maintenance. Every 4 km section of the fence is maintained by a fence attendant who is a member of the fence adjacent community. Without them the fences would quickly fall into disrepair. The tasks of reforestation and wildlife and ecosystem monitoring also fall on the local communities, who are best placed to undertake them. Local communities participate in forest protection through intelligence gathering and community policing. Government agencies support the partnership by providing the day-to-day supervision for the fence construction and maintenance, law enforcement as well as providing the technical expertise that the local workforce requires. Rhino Ark completes the public-private partnership by raising funds for the fence projects, providing overall supervision, governance and quality control for the fence construction and maintenance, as well as ensuring full engagement of the

communities. This cooperation enables the implementation of the Rhino Ark fencing and conservation projects to (a) benefit from the strengths of the various partners and reduce duplication, (b) ensure direct community participation and increase acceptability of the fence, and (c) provide flexibility which is essential to respond efficiently to any emerging issues during the fence build and maintenance.

Challenges

Despite the benefits derived from public-private partnerships, certain challenges remain. The public sector has yet to fully appreciate the benefits of public-private partnerships and to provide appropriate mechanisms to further engage the private sector. Meanwhile, the private sector has yet to fully realize the dependency of their respective economic sector on the natural capital and the need to invest in the natural capital as it helps reduce business risks – such as flash floods, water shortages and energy shortages that could stem from any further degradation of Kenya's water towers.



Mountain Bongo Surveillance Project



Conservation status

The Mountain or Eastern Bongo is one of the two Bongo sub-species existing in Africa. The other sub-species is the Low-land Bongo which is found in the low-land forests of West Africa, the Congo Basin, Central African Republic and South Sudan.

The Mountain Bongo is a critically endangered species only found in Kenya. Fewer than 100 individuals are believed to survive in the wild. Their known distribution is restricted to parts of the Aberdare and Mt. Kenya forests east of the Rift Valley, as well as small, especially vulnerable groups in the Mau west of the Rift Valley, in particular South Western Mau, Maasai Mau and Eburu.

The Bongo is susceptible to disease such as rinderpest and predators such as lion have taken their toll. But the most serious threat is the growing human population living near the forests. With population increase there is a greater demand for meat regardless of the source. Poaching, together with illegal logging activities over recent years, have been a real threat to the Bongo and their habitats.

Conservation efforts

The Bongo Surveillance Project (BSP), initiated in 2004 and supported by Rhino Ark, is dedicated to the protection and monitoring of the Mountain Bongo and their habitats. The BSP works closely with the Kenya Wildlife Service (KWS) and the Kenya Forest Service (KFS). The Bongo inhabits home ranges up to 15 km². It is an ideal "umbrella species" and, therefore, a symbol of Kenya's remaining high-forest ecosystems. Saving the Bongo can help conserve a significant part of Kenya's mountain forest ecosystems, thereby protecting both biodiversity and Kenya's vital hydrological resources.

Preventing the extinction of the Bongo, while ensuring the continuing recovery of this sub-species, can only be achieved by effectively engaging the local communities. Thus the BSP works closely with local communities that are key to the success of the programme.

The BSP team collects essential research data during their specialised field studies, forming quantitative information to monitor the surviving Bongo groups. Through this monitoring, together with the outreach on conservation education and awareness, the BSP has the potential to preserve a flagship species for Kenya's forests.

Monitoring and Surveillance – The Bongo Surveillance Unit (BSU) is a group of experienced trackers from local communities supporting conservation. They conduct regular patrols, collect evidence of Bongo presence, report on any illegal activity and remove snares and traps. The BSU collected over 300 snares and 19 elephant spear traps in a two month period during 2012/3. Through their reports, a clearer picture is emerging on the actual range and population of Bongo. The surveillance also provides vital scientific data to form an information baseline about Bongo habitat utilisation and threats.

Education and Awareness

– The BSP is spearheading the establishment of Bongo Wildlife Clubs to raise awareness in the local community about the environment and the Bongo in particular and organize education programmes for schools.

Fencing – The Aberdare and Eburu fences, supported by Rhino Ark through fund raising for construction and maintenance, serve as a deterrent to would-be poachers and logging gangs, while keeping wildlife away from neighbouring farmland. It has provided a safer environment for wildlife, and the Aberdares are home to most of the remaining Mountain Bongo population.

Mountain Bongo characteristics

- **Colour:** bright chestnut with old males almost black; 12 to 14 vertical white stripes
- **Size:** height of 1-3 metres; length of 1.8-2.4 metres



Community Projects – The BSP implements small-size projects to engage communities in conservation. These include: micro-smart solar power grid and solar lamps, improved agricultural practices, afforestation, rain water harvesting, fish farming and bee-keeping.

Re-introduction – In the 1960s and 70s, wild Bongo from Kenya were exported to zoos in the USA. In 2004, a project to reintroduce descendants of the exported Bongo back to Kenya was initiated. Male and female Bongo have been repatriated to Mt. Kenya under this project, which aims to re-establish a self sustaining population in the Bongo's native habitat.

With additional funding, the BSP would be able to strengthen and expand its conservation activities. Visit www.mountainbongo.com for the BSP wish list and support the conservation of the Mountain Bongo and its habitat by making a donation through www.justgiving.com/mountainbongo.



The Rhino Charge



How it began

The Rhino Charge was conceived in 1989 to raise funds for the construction of the Aberdare Electric Fence. Rhino Ark founder Ken Kuhle, Rally Enthusiast Rob Combes and Brian Haworth mooted the idea of an off-road motorsport event to support the fencing project carried out by the recently established Rhino Ark Kenya Charitable Trust. The Trust was committed to saving the Aberdare National Park's dwindling Rhino population, as well as mitigating human-wildlife conflicts around the National Park. On 4th February 1989, 31 competing vehicles entered the first event which was won by Travers Allison in a Suzuki jeep. Whilst the first Rhino Charge raised only KES 250,000, this amount increased tremendously over the years to reach over KES 183 million in the 2018 event.

How it works

The Rhino Charge is a one day off-road event during which a maximum of 65 competitors are required to visit 13 control points scattered over approximately 100 square kilometres of rough terrain within a 10 hours period. Supplied with a 1:50,000 scale map of the venue and the GPS coordinates of the 13 control points, each competing team decides the route they want to follow. The winner is the competitor who finishes at the control point where he started having visited all the other control points in the shortest distance (GPS measured).

The Charge is a unique and exciting competition that requires bravery and a high level of skill in off-road driving and navigation. To prevent adverse environmental impacts, entries to the event are limited to 65 vehicles. The popularity of the Charge is such that the organisers have introduced a preferential entry strategy favouring high value fund raisers because would-be entrants far exceed available places in the event.

Organization

The Rhino Charge is organized by a Committee of professionals who voluntarily prepare and run the event every year. It is held in a different location each year in some of the most remote and wild areas of Kenya. The event takes place at the end of May/beginning of June each year and is open to all, subject to the Rules and Regulations stipulated by the organizing Committee. The Committee keeps the event location secret until the day of the event. The secrecy of the location prevents people from being tempted to look at the site ahead of time.

Fund raising efforts

In order to be accepted to the event competitors are required to pledge and raise the minimum sponsorship set by the organizing Committee. Most competitors, however, raise considerably more. In 2018, Car No. 5 (Alan McKittrick team) raised KES 21,030,381. Since their first Charge in 1989 Car 5 team has raised a staggering amount of KES 153,890,756. And this is not the only team... Long-time supporters such as Peter Kinyua have raised a total of KES 74,330,992 over 19 charges. In 2018 alone, they raised 24,770,681, the highest ever amount raised by one team over one year.

From 1989-2018, the Rhino Charge has raised a total of KES 1,502,088,214. In order to ensure that the funds raised by the competitors go to conservation, the Rhino Charge event is organized based mostly on in-kind support provided by many volunteers, event sponsors and raffle donors.

Since 1989, the funds raised have been used for the construction of the Aberdare Electric Fence and supporting conservation activities within the Aberdare ecosystem, in addition to on-going maintenance of the fence and engaging fence-adjacent communities in conservation. Since 2012, funds raised by the Rhino Charge are also used for fencing Mt. Kenya (180 kilometres out of 450 built to date) and Mau Eburu (completed in 2014), as well as to maintaining the Aberdare Fence. In addition, they are used to engage and educate forest-adjacent communities in conservation; establish wildlife corridors; conduct periodic joint surveillance flights; detect and monitor forest fires and support communities in combatting them; and monitor the health of the forest ecosystems.

The Rhino Charge Raffle

The Rhino Charge Raffle was introduced in 2002 as a tool to assist Rhino Charge entrants with fund-raising and to reward competitor sponsors for their support. The Raffle which offers every donation of KES 2,000 a chance to win a prize is a key motivation for the public to support competing cars. The Raffle is organized by a Raffle Committee that voluntarily works tirelessly towards securing generous prizes from over 100 donors.



Minimizing the footprint of the Rhino Charge



As a conservation organization, Rhino Ark Charitable Trust is deeply sensitive to minimizing any environmental impact that could derive from its operations. This extends to the Rhino Charge, Rhino Ark's main fund raising event to support the conservation of Kenya's 'water towers'.

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Mitigating the impact of the competition cars

The format of the Rhino Charge was developed towards minimizing the impact of the competition cars on the environment:

- To prevent any significant damage, the duration of the competition is limited to 10 hours and only 65 competition cars may participate in the event;
- To avoid cumulative impact from consecutive events, the Rhino Charge is organized each year in a different location.

In 2008 Rhino Ark commissioned an environmental and social impact audit of representative samples of venues where the Rhino Charge event had been held.

The venues assessed were Tassia Ranch (Mukogodo Division, Laikipia), Swuari Lagha (Wamba Division, Samburu), Ol Kinyei Group Ranch (Mara Division, Narok), and Lorongoswa Group Ranch (Kajiado). The audit was carried out by African Conservation Centre.

The audit found that there was minimal impact on the sites arising from Rhino Charge activities. Recommendations arising from the audit were incorporated into subsequent Charge venues and course designs.

Recycling the waste generated at the venue

One of the main environmental challenges of organizing an event with between 3,000 and 4,000 officials, participants and spectators in the most remote wilderness areas of Kenya is the management of waste. In keeping with Rhino Ark's conservation mission, the Rhino Charge Committee is dedicated to leaving each venue as they found it.

To this end, stringent rules have been set by the Committee to ensure that no refuse is left anywhere in the entire Rhino Charge venue. This includes a system of fines that is strictly implemented to address refuse generated by competitors and spectators. In addition, with the support of key sponsors, refuse is collected across the venue, including the Spectator Camp and the Gauntlet.

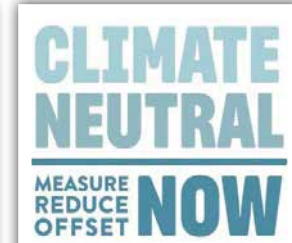
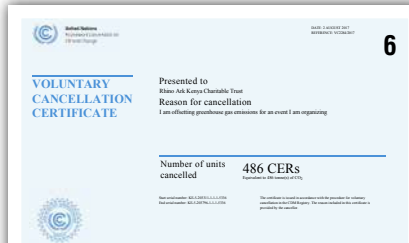
To promote refuse recycling, a Waste Sorting Station is set up at the venue. Glass, cans, tins, and plastic bottles, among others, are separated and brought back to Nairobi for recycling. Since 2013, over 50 cubic metres of refuse have been properly sorted at each event and removed from the venue for recycling.

To reduce the generation of plastic waste associated with one-use plastic items, in particular plastic water bottles, the Rhino Charge organizers have provided each person coming to the 2018 Rhino Charge with one multiple-use metallic water bottle.

Making the Rhino Charge Climate Neutral

Rhino Ark has committed to make the Rhino Charge climate neutral from 2017 onwards, namely to offset the CO2 emissions related to the event by purchasing corresponding amounts of carbon credits on the market. In 2017, Rhino Ark purchased offsets to compensate for the CO2 emissions from the Rhino Charge from a carbon project implemented in Kenya that promotes the use of, and disseminates improved cooking stoves.

As part of this commitment, the Rhino Charge has joined the Climate Neutral Now movement.



1. Waste sorting station
2. Waste sorting station in full activity
3. Sorted aluminium cans
4. One of the two Highlands trucks three quarters full of sorted plastic waste
5. Waste sorting site after the charge
6. Certificate of purchase of offsets
7. Climate Neutral Now
8. Use of metallic bottles