

# URBAN FORESTS & GREEN SPACES IN AFRICA

Case Studies and Lessons from Across the Continent



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URBAN FORESTS IN

# EAST AFRICA

CHAPTER 3

# KENYA

## BACKGROUND

In the late 1890s, the site of downtown Nairobi was a wetland alongside grassland with scattered acacia trees. For the Masai people, who called it Enkare Nyrobi, it provided dry-season pasture and water for their livestock. In 1899, with the arrival of the Kenya-Uganda Railway, the British introduced Australian eucalypts to drain the swamp and supply wood fuel for steam locomotives.

In 1906, Karachi-born Alibhai Mulla Jeevanjee donated a 2ha park to the nascent city. In 1907, the 30.4ha Nairobi Arboretum was set up to trial exotic trees, and, in 1925, the 60ha City Park was established. Between the neighbourhoods of Parklands and Muthaiga, it served as a green buffer zone between the Asian and European communities.

**Other key urban forest dates in Kenya's capital include:**

- 1947, when English horticulturist Peter Greensmith became Parks Superintendent and rolled out roundabouts of succulents and bougainvillea, and avenues of jacaranda, Pride of Bolivia *(Tipuana tipu)* and *Washingtonia* palms for the next 20 years.
- 1969, when President Jomo Kenyatta opened the 12.9ha Uhuru Park.
- 1999, when Wangari Maathai (the scientist and activist who later became an MP and Nobel Peace Laureate) was injured while defending Karura Forest Reserve (gazetted by the British in 1932) from developers, setting the reserve on the route to becoming Africa's most successful urban forest (see Case study 8), which in turn later triggered efforts to secure Ngong and Ololua forests.
- 2020, during the COVID epidemic, when the city revived John Michuki Memorial Park and made it free to the public so that families cooped up at home could stretch their legs.

Today, Nairobi is ablaze with tree planting, including in the informal settlements like Kibera, Mathare and Korogocho. There, gardens of trees memorialise young men lost to violence, and former self-described gangsters have greened the banks of the Nairobi River. This wave of urban forestry is also spreading, with key regional towns increasingly prioritising urban trees (see Case study 12 on port city Mombasa).

President William Ruto's 2022 pledge to combat climate change by growing 15 billion trees by 2032 (with an initial target of 5 billion by 2027) evokes mixed reactions among urban foresters. In Nairobi, ambitious targets have led to a dash to get seedlings in the ground, often prioritising quantity over the 'Right Tree, Right Place' principle and with little aftercare. Paradoxically, while these saplings

struggle to take root, the construction of infrastructure and unregulated private development is leading to the felling of established and often 'veteran' trees.

However, few countries in Africa have the social capital of Kenya. In Nairobi alone, there are botanists at the National Museums of Kenya, academics at multiple universities, and experts at national advocacy groups like Nature Kenya and WildlifeDirect, key government agencies like the Kenya Forest Service and the Kenya Forestry Research Institute, and global powerhouses like IUCN, UNEP, and CIFOR-ICRAF.

The challenge for urban areas is where to plant trees, getting species right, protecting mature trees, and improving survival rates.

### Further reading

'Nairobi recovers its green spaces during pandemic. Other cities can too.' **https://news.trust.org/item/20200824124618-bpc0a/**

## CASE STUDY #8

# Karura Forest – so life-giving that doctors prescribe it: 'Some visitors have high blood pressure and have been advised to exercise'

**Karanja Njoroge, Professor and former FKF board chair; Peter Njagi, FKF Ecosystem Biodiversity Coordinator; Chantal Mariotte, FKF board member**

Karura Forest Reserve, located just 6km from Nairobi's CBD, is a mosaic of indigenous forest, regenerating secondary forest, exotic tree plantations, wetlands, rivers and riparian zones. It also has one lake, 60km of maintained walkways and bikeways, and a triple football pitch.

Covering 1,041ha, it is one of the few forests in the world located fully within major city limits, and the most visited city forest in Africa, which also makes it the most financially secure. In 2025 it received almost US$1,300,000 from entry fees of about 900,000 visitors, which went to a joint account of Kenya Forest Service (KFS) and Friends of Karura Forest (FKF), joint operators of the forest, to pay for the forest's maintenance, infrastructure and 122 staff.

FKF has its own separate revenue stream, mostly from bike rental, cafés and guided tours, under its ecotourism user rights as provided

**A large buttressed *Manilkara discolor* near the Mau Mau cave in the forest. Photo: C Watson.**

for by the Forest Act of 2016. The funds are used to benefit community members and for research. The government, meanwhile, pays for the salaries of the forest station manager, his deputy, and around ten rangers.

Kenyans make up 85% of visitors, adults paying the equivalent of just 90 US cents and children 35 US cents per entry. Adult foreign residents and tourists pay the equivalent of US$1.80 and US$5.30.

The forest is open every day from 06:00 to 19:00, with guards on duty 24 hours and 60 FKF scouts on patrol on rotation. According to statistics, it is 'extremely' safe. FKF's community assistance for the informal settlement that borders it, home to many of its staff and casual laborers, secures it further: over 700 children and youth from Huruma, as well as Githogoro and Gachie, have so far benefited from the FKF bursaries.

It was not always peaceful. 'Long before colonialism, Karura Forest was a sanctified place managed by the Gikuyu for worship, hunting and as source of medicine from trees like Muthiga *(Warburgia ugandensis)*,' says former FKF chairman Professor Karanja Njoroge. 'But the British gifted most of it to colonial farmers to grow coffee, and the community was denied access. The remaining part was also cleared and gazetted as a forest reserve in 1932 to grow foreign trees to fuel steam trains.'

> 'Green spaces do not need to be a perpetual fiscal drain. And access to green spaces requires fees such that all cadres of society are able to enjoy a walk or a jog.'
> – PROFESSOR KARANJA NJOROGE

In 1998, almost a third of the forest was secretly allocated to developers, and the Forest department received notice to quit. This triggered impassioned protests led by Professor Wangari Maathai, founder of the Green Belt Movement and later Nobel Peace Prize winner. She and her followers were badly defeated. All the while, the state of the forest was spiralling down – frequented by criminals and too dangerous to enter, home to illegal distilleries, its animals hunted for meat, and poached for its valuable Muhuhu trees *(Brachylaena huillensis)*.

Under the next government, however, Maathai became the Assistant Minister in

**Karura Forest's nursery produces seedlings of over 30 indigenous species for replanting in areas cleared of exotics. Stephen Mbugua leads the team and comes from a nearby community, as do the nursery workers. On the right is a neatly labelled not commonly planted indigenous tree in the forest, *Margaritaria discoidea*. Photos: C Watson.**

**Karura Forest contains multiple wetlands that are particularly critical for waterfowl. Some are ephemeral and disappear in the dry months. Photo: C Watson.**

charge of Forests and in 2005 helped to push through a revised Forest Act that gave the right to Community Forest Associations (CFAs), like Friends of Kararu Forest, to play a major role in managing forests. FKF was founded in 2009, and, on 25 February 2010, the first MoU between KFS and FKF was signed and an electric fence erected around the forest.

The change was almost instant. Feeling secure, visitors poured in. Wildlife started returning and increasing: today, animals present include bushbabies, bushpig, bushbuck, duiker, suni, porcupine, genet, civet, fruit bats, and 230 bird species. And FKF began steadily replacing exotic trees with indigenous African montane forest species. Native tree cover has increased from 25% in 2009 to 63%. The forest's over 560 species of plants include trees *Teclea/Vepris nobilis*, *Rothmannia urcelliformis*, and *Uvariodendron anisatum*, which is endemic to Kenya.

One of the most remarkable achievements is the reintroduction of the threatened black-and-white colobus monkey *(Colobus guereza* subsp. *kikuyuensis)*; Karura had lost its native population in the 1960s and 1970s. A 'source' was identified in the Kipipiri agroecosystems of Nyandarua County, where farmers had cleared riverine habitats. The colobus monkey population, the most arboreal in Africa, was stranded on the remaining bushes, rock outcrops and on the ground. Without their staple diet of tree leaves, they resorted to raiding potato and cabbage fields. Conflict with farmers was escalating.

'The translocation began with pre-capture assessments and prolonged habituation of target groups to capture cages,' explains



**Groups of women and children are a common sight in the forest. They patently feel safe and are often seen exercising on their own. On the right is *Rothmannia urcelliformis,* a flowering indigenous tree that occurs in Karura forest. Photos: C Watson.**

primatologist Peter Njagi. 'This was essential to lure the families into the capture cages, allow accurate group composition assessments prior to capture, and ensure an all-family group capture. Capture operations were conducted using certified medium-sized primate capture cages under veterinary supervision. Entire family groups were targeted to maintain social cohesion. In total, 22 family groups comprising 142 adult males, females, juveniles and infants were captured, and translocated in three phases between May 2014 and March 2016. All individuals were checked for health, treated where necessary, and transported under controlled conditions.'

**Professor Karanja Njoroge and environmentalist Wanjira Mathai, daughter of Nobel Prize winner Wangari Maathai who fought to defend the forest, with King Charles III, who visited Karura on a trip to Kenya in 2023. Photo: H Croze.**

The 'soft' release into Karura Forest took several months, allowing animals to acclimatise before full dispersal. 'Post-release monitoring was a core component too,' adds Njagi, who now leads research for FKF. 'Researchers conduct intensive behavioural and ecological monitoring, record ranging patterns, feeding behaviour, habitat use, group cohesion, reproduction, associations with other primate species, and responses to predators. They also observe health and track survival rates.'

By 2025, the Karura colobus population had increased to over 30 family groups and an astounding 240 individuals, with multiple family groups established across the forest, especially the riverine habitats. 'Monitoring has continued for over ten years, documenting successful adaptation, stable home ranges and successful breeding,' says the researcher.

This was a science-based human-organised reintroduction. Biodiversity has also returned on its own. The five rivers that traverse the forest now have families of African clawless otters. Apex predators Crowned Eagles are back and reproducing. The owl population is growing. And side-striped jackals, among the smallest canines who live in families rather

than packs, are also regularly seen.

Equally phenomenal has been the impact for people, the forest particularly a boon to adults who live in a growing culture of processed food and long sedentary hours: in Kenya, non-communicable diseases account for over 50% of hospital admissions.

'They really value it. Many are diabetic or have high blood pressure and have been advised to exercise,' says forest scout Peter Kamau of Karura's up to 80,000 visitors a month.

## Lessons learned

- Shifting from state-only management to a Community Forest Association model turned a high-crime area into a safe, top-tier attraction.
- Hiring from local informal settlements transformed former 'poachers' into professional forest scouts and provided a steady income stream.
- Intentional science-based ecological restoration proved that replacing exotic plantations (eucalyptus, cypress, pine, *Araucaria)* with indigenous species is essential for bringing back wildlife.
- Self-sustainability is achievable: modest gate and other fees can fully fund 122 permanent staff, proving that conservation does not always require government subsidies.

## Recommendations

- Secure the perimeter first: always establish physical security (e.g., electric fencing) as a prerequisite for any reforestation or tourism activities.
- Formalise legal frameworks: use specific legislation (like the 2005 Forests Act) to create clear joint-management agreements between the state and the public.
- Diversify forest value: beyond trees, market forests as a hub for research and education to build deep public and scientific support.
- Ensure that 'maximising revenue' does not compromise the core mission of delivering health and social benefits to visitors, biodiversity and local livelihoods.

## Further reading

- **https://friendsofkarura.org/**
- **https://friendsofkarura.org/forest-history/**

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**Left: Because any tree cutting provokes concern among the public, managers of the forest use signposts to explain the reasons for clearance of exotics. Centre: Peter Njagi, who oversaw the translocation of the colobus. Right: Black-and-white colobus with baby thriving in Karura Forest. Photos: C Watson, P Njagi, H Croze.**