

Wangari Maathai Institute's students's visit Karura Forest as part of experiential learning

Wangari Maathai Institute for Peace and Environmental Studies students visited Karura Forest on 29th October 2015 as part of their experiential learning. Karura forest is one of the most pristine urban forest in the country. It was gazetted in 1932 and originally measured 1,063 hectares making the largest reserve in Nairobi. The forest consists of two blocks which are divided by a road. The forest has both the exotic and the indigenous tree species.

Examples of the indigenous tree species are the:

Olea europaea subs. *auspidata*-*croton megalocarpus*, *Warburgia ugandensis* (Muthiga), *Brachyleana huillensis* (Muhugu), *Uvaridendron anasatum*, *Marhkamia lutea*, *Verpis nobilis*, cedar, *Craebea brownie*, *Newtonia buchananii*, *salvadora Persia*, *Ficus thonningii*, *Trichilia ametica*, *Dombeya goetzenii*, *Calondendrum capense* among others.

The exotic species found are;

Eucalyptus species- blue gum, *Araucaria* species of pine trees, *Senna spectabilis*, *Podocarpus pelicartus*, *Tipuana tipu*, *Bottle brush*

Karura ecosystems

There are 4 different types of the ecosystems within the forest, these include:

- Highland dry forest
- Wetland
- Riverine forest
- Edaphic grasslands

Mammals

Bushbucks, Harvey's duikers, Sykes monkeys, Suni, dik diks, antelopes, porcupine Genet cats, Bush pigs, white tailed mongoose, lawless otter

BIRDS

There are over 200 birds species that are found at Karura forest

Some of the biodiversity found in the forest are,

BUTTERFLIES

There are many butterflies found at Karura Forest. They are so beautiful and this therefore makes them to be the main contributors of tourists attraction at the forest. At times they can be found in large numbers congregated at the lake 'Butterfly lake,' which is found in the forest reserve.

Invasive species in the forest

The most common invasive species in the forest are the:

- i. *Lantana Camara*
- ii. *Caesalpinia decapetala*
- iii. *Salvinia molesta- which has invaded the lilly lake*

The invasive species in the area has occupied a large area, 65 hacters of this land occupied by the invasive species has been cleared and now replaced with the indigenous trees

Management of the forest

Kenya Forest Service has been given the mandate by the government to carry out the management and the protection of the forest. In addition to KFS, there are Community Forest Associations which are also involved in the management of the resource. Examples of the CFAs are the communities around Huruma and the Friends of Karura Forest (FKF) among others.

The patron of the FKF was the late Prof. Wangari Maathai who really fought for the existence of the same forest.

The communities living around the forest especially those from Huruma area, manage the forest because in one way or another, they benefit from the same forest resource, for instance, they utilize the forest by practicing bee keeping- they are about 1500 bee hives which belong to the residents of Huruma. As a result of this, the community view the positive reason as to why they should enhance good management of the forest since they are the beneficiaries in one way or another.

IMPORTANCE OF KARURA FOREST:

There are so many benefits from Karura forest which range from social, economic and the recreational benefits

SOCIAL BENEFITS OF THE FOREST

Carbon sequestration and atmospheric purification

This forest plays a role in climate regulation. They act as sponges when it comes to gases in the atmosphere, retaining large levels of CO₂ and other Green House Gases (methane and nitrous oxide).

Karura forest is one of the urban forests in the world. It contributes to the greening of Nairobi city since the forest is no located so far from the CBD. As a result of high industrial set-up in the CBD that leads to emissions of various gases, the forest reserve therefore serves as a cleaner -lungø that purifies the dirty air by utilizing the carbon dioxide an releases the Oxygen which is so beneficial for human survival.

The forest cleanses much of the carbon dioxide released from the cars and the industries within and outside the town. It is therefore a very crucial resource for the residents in Nairobi.

Source of rivers

Karura forest is a source of many rivers, for example the Thigiri, Ruaka and Mathare rivers have their tributaries arising from Karura forest. These rivers flow downstream and form the Athi river which goes down to Indian Ocean. As the river flows downstream, many people utilize it for various purposes, though it faces a challenge of being polluted as a result of population increase in the town and its periphery.

Hub of Knowledge

Karura forest is literally a natural laboratory with a lot to discover, research and monitor. It therefore, serves as a source of knowledge and opportunity for scientists to expand and improve their knowledge as well as research skills.

In addition to this, Karura forest serves as an education centre especially for children to learn more on environmental conservation, importance of a given range of flora and fauna and general importance of forests and why they need to be fought for and protected.

Wildlife Habitat.

Karura Forest is home to several mammalian, reptile, bird, butterfly and tree species, among others. These include; Sykes Monkeys, Ground Squirrel, Hares, the Epauletted-bat, pythons, green snakes, Silvery-cheeked Hornbill, the Hartlaub's Turaco, the Narina Trogon, Owls, Crested Cranes, Sparrows, Doves, Weavers as well as butterflies such as the Desmond's Green Banded Swallowtail.

Source of Livelihoods

Karura forest supports several apiaries set up by the local community, this is a major if not the sole source of income for a huge number of the members in the nearby local communities.

Source of Income

Several members of the community ie Huruma are employed or contracted to work in the forest eg clearing of fence vegetation, clearing of invasive species, clearing solid waste, guarding forest among others.

Vital data collection in the busy Nairobi- Infrasonic Station

According to a site survey that was conducted by Kenya's National Council for Science and Technology (NCST), in collaboration with the CTBTO's Provisional Technical Secretariat (PTS) from 31 March to 18 April 2000, the NCST's survey identified the Karura Forest on the northern outskirts of Nairobi as the preferred location for establishment of IMS infrasonic station

IS32. Measurements of background micro-pressure and wind noise made during the site survey clearly showed that this densely forested area provided good wind shelter, which is an important criterion for reducing background noise in infrasound measuring.

Ecological importance of the forest

Protection of Indigenous species;

Karura forest, being fenced and well-guarded provides protection to indigenous species which would have otherwise been destroyed and probably forever lost.

Weather and Climate Regulation

This forest influences the area's weather patterns and even creates its own micro-climate. Moreover, by growing a canopy to hog sunlight, this forest also creates a vital oasis of shade on the ground and therefore makes the general area near Karura forest wetter and cooler than most other areas.

Flood impact reduction;

Tree roots are key allies in heavy rain, especially for low-lying areas like river plains. The forest therefore helps the ground absorb more of a flash flood, reducing soil loss and property damage by slowing the flow.

Sound and Wind Buffer:

Sound generally fades in forests, making trees a popular [natural noise barrier](#). The muffling effect is largely due to rustling leaves. This helps reduce sound pollution from the very busy Kiambu road and Limuru road. In addition to this the forest serves as a [windbreak](#), providing a buffer to nearby communities e.g community in Huruma.

Recreational Facility- Source of Enjoyment and Inspiration

Karura offers several fun and exciting facilities such as picnic sites, bird watching, cycling, nature trails among others. Moreover, the natural beauty, majesty and peace the forest offers serves as a source of enjoyment and inspiration for many. This is made even more evident by the tremendous increase of visitors to the forest.

Erosion Prevention and Soil Fertility

The deep tree root network which stabilizes large amount of soil, the ground cover and large canopies of the forest assist in preventing soil erosion, which in turn ensures soil fertility is retained.

Source of Health

With the clean fresh air and environment of Karura forest, as well as the several nature-packed jogging , walking and training facilities (jungle gym) offered, the forest has served as a natural source of health to the surrounding communities and beyond who have engaged in these healthy lifestyle activities.

Pillar of its Communities

Karura Forest serves as pillar of its communities. It really ties everything together! It brings different communities together regardless of their social, cultural and economic backgrounds. This forest is generally vital to each community in a unique and special way. It is indeed a pillar of its communities, and this is why the conservation and protection (e.g. through erecting an electric fence) was supported and fought for collectively.

THREATS TO KARURA FOREST

- **Logging and deforestation**
Logging interests cut down rain forest trees for timber used in flooring, furniture, and other items. The forest has been facing the challenge of its trees being cut down for various uses especially from the residents of the informal set-up of Huruma.
- **Land grabbing/ Encroachment of the forest**

The forest has been facing so many challenges from the private developers and even the politicians as the place is in an urban set-up, and it is so pristine for some people to live in such a cool and clean environment as the forest. This has therefore made the place so vulnerable to land grabber who does not value the unseen values of the same forest reserve. The late Prof. Wangari Maathai did her best so secure the forest when it was in high level of being grabbed by the politicians during the time of the former president Daniel moi.

Invasive species

There are some of the invasive species that are found in the forest and has had the detrimental effects in the forest in that it has led to the eradication/ erosion of some of the species which are of high value in the forest.

SOLUTIONS

- The issue of land grabbing has been dealt with effectively by fencing all-round the forest with the electric wire.
- Invasive species has been worked with by the stakeholders taking action of the eradication of the invasive species and replacing it with the exotic trees.
- Insecurity in the forest has been curbed by employing some of the scouts and the guards that carries out the patrol around the forest.
- Sustainable-logging regimes that selectively cull trees rather than clear-cut them would save millions of acres of rain forest every year.
- Campaigns that educate people about the destruction caused by rain forest timber and encourage purchasing of sustainable rain forest products could drive demand down enough to slow deforestation.

- Encouraging people who live near rain forests to harvest its bounty (nuts, fruits, medicines) rather than clear-cutting it for farmland would save millions of acres.