

A Citizen Science-based Conservation of Threatened Biodiversity Through Protection of Sacred Natural Sites in Makueni, Kenya



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**Project Update
41639-B**

April, 2024

Field investigation to map and profile the Sacred Natural sites in Makueni County, Kenya

1. Kimiisya Sacred Grove in Makuli Forest

Kimiisya, a sacred site nestled within Makuli Forest, falls under the protection of the Kenya Forest Service (KFS). While much of the forest consists of plantations, there remains a significant area of indigenous vegetation that harbors rare and unique plant and bird species. This investigation, however, specifically centered on the diverse plant species surrounding the sacred sites within the forest.



Figure 1: *Nuxia congesta* R. Br. ex Fresen dominating the Kimiisya Sacred Grove on Makuli Forest

The major plant species signifying the cultural site included four individuals of *Nuxia congesta*. Additionally, the site was associated with a variety of other plant species, including:

1. *Nuxia congesta* R. Br. ex Fresen.
2. *Clerodendrum* sp.
3. *Albizia gummifera* (J.F. Gmel.) C.A. Sm.
4. *Ochna ovata* F. Hoffm.
5. *Eucalyptus saligna* Sm.

6. *Canthium* sp.
7. *Vangueria apiculata* K. Schum.
8. *Solanum* sp.
9. *Acalypha ornata* Hochst. ex A. Rich.
10. *Toddalia asiatica* (L.) Lam.
11. *Rhipsalis baccifera* (J.S. Muell.) Stearn
12. *Angraecum affine* Schltr.
13. *Eulophia streptopetala* Lindl.
14. *Terminalia brownii*

According to local community elders, the plant species considered special and important for rituals in the sacred groves included *Kalanchoe* species, and *Ocimum basilicum*.



Figure 2: Investigation team mapping sacred sites within the Makuli Forest

2. Ka Ndoo Sacred Grove

The habitat was predominantly dominated by plantation areas; however, pockets of indigenous plant species provided clear evidence of the existence of a sacred grove. These native species not only marked the grove's historical and cultural significance but also contributed to the biodiversity of the area, supporting unique ecological functions and traditional practices.



Figure 3: *Ansellia africana* growing in a Ka Ndoo Sacred Grove

Plant species recorded within the sacred grove included.

1. *Ansellia africana* Lindl.
2. *Tiliacora funifera* (Miers) Oliv.
3. *Rhipsalis baccifera* (J.S. Muell.) Stearn
4. *Psychotria kirkii*
5. *Cola greenwayi* Brenan
6. *Smilax anceps* Willd.
7. *Adenia gummifera* (Harv.) Harms
8. *Cyperus* sp.
9. *Ricinus communis* L.

The plantation is composed of; *Eucalyptus saligna*, *Cyperus* sp., Pine

3. Kwa Syuvinda Sacred Grove

Syuvinda, a sacred site situated on private land, features a habitat characterized by wooded bushland. The area is dominated by a variety of plant species, which contribute to its ecological and cultural significance. This sacred grove was officially mapped and documented by the County Government of Makueni, ensuring its recognition and protection.



Figure 4: Syuvinda Sacred Grove

The following tree species were recorded from the sacred grove.

1. *Pittosporum viridiflorum* Sims
2. *Azanza garckeana* (F. Hoffm.) Exell & Hillc.
3. *Croton megalocarpus* Hutch.
4. *Croton dichogamus* Pax
5. *Lantana camara* L.
6. *Rhus natalensis* Bernh. ex C. Krauss
7. *Vitex payos* (Lour.) Merr.
8. *Gnidia* sp.
9. *Rothea incisa* (Klotzsch) Steane & Mabb.
10. *Rhynchosia hirta* (Andrews) Meikle & Verdc.
11. *Pyschotria* sp.

12. *Acalypha* sp.
13. *Pentas bussei* K. Krause
14. *Bauhinia tomentosa* L.
15. *Combretum molle* R. Br. ex G. Don
16. *Senna singueana* (Delile) Lock
17. *Pappea capensis* Eckl. & Zeyh.
18. *Osyris lanceolata* Hochst. & Steud.
19. *Euphorbia crotonoides* Boiss
20. *Synadenium compactum* N.E. Br.
21. *Dodonaea viscosa* Jacq.
22. *Euclea divinorum* Hiern
23. *Eulophia petersii* (Rchb. f.) Rchb. f.
24. *Mystroxyton aethiopicum* (Thunb.) Loes.
25. *Aspilia mossambicensis* (Oliv.) Wild
26. *Cissus quadrangularis* L.
27. *Uvaria scheffleri* Diels
28. *Euphorbia candelabrum* Tremaut ex Kotschy.

4. **Kwa Kalinde Sacred site**



Figure 5: Kwa Kalinde sacred Grove

The shrine is located on private land and the following plant species were recorded from it.

1. *Tamarindus indica* L.
2. *Terminalia brownii* Fresen.
3. *Acacia* sp.
4. *Angraecum affine* Schltr.
5. *Commiphora* sp.
6. *Combretum* sp.
7. *Cissus quadrangularis* L.
8. *Sansevieria suffruticosa* N.E. Br.
9. *Solanum* sp.
10. *Combretum collinum* Fresen.
11. *Gnidia latifolia* (Oliv.) Gilg
12. *Pletranthus* sp.
13. *Eulophia petersii* (Rchb. f.) Rchb. f.
14. *Ziziphus mucronata* Willd.
15. *Vangueria apiculata* K. Schum.
16. *Asparagus africanus* Lam.
17. *Psychotria kirkii* Hiern



Figure 6: Fruit-bearing *Tamarindus indica* within Kwa Kalinde Sacred Grove.

5. **Kwa Lilya sacred grove**

1. *Combretum schumannii* Engl.
2. *Acacia brevispica* Harms

6. **Kalima Sacred Grove**



Figure 7: Kalima sacred grove

The following plant species were recorded from the site; -

1. *Cissus rotundifolia* (Forssk.) Vahl
2. *Terminalia brownii* Fresen.
3. *Combretum* sp.
4. *Kalanchoe* sp.
5. *Hibiscus* sp.
6. *Harrisonia abyssinica* Oliv.
7. *Psychotria* sp.
8. *Grewia bicolor* Juss.
9. *Lantana camara* L.
10. *Aspilia mossambicensis* (Oliv.) Wild
11. *Crotolaria* sp.

12. *Acacia mellifera* (Vahl) Benth.
13. *Ocimum basilicum* L.
14. *Acacia nilotica* (L.) Willd. ex Delile
15. *Erythrochlamys spectabilis*
16. *Lonchocarpus eriocalyx*
17. *Grewia bicolor* Juss.

7. Tutini Sacred Grove

1. *Ficus* sp.
2. *Croton dichogamus* Pax
3. *Senna singueana* (Delile) Lock
4. *Acalypha fruticosa* Forssk.
5. *Aspilia mossambicensis* (Oliv.) Wild
6. *Ocimum* sp.
7. *Azanza garckeana* (F. Hoffm.) Exell & Hillc.
8. *Combretum* sp.
9. *Grewia* sp.
10. *Turraea robusta* Gürke
11. *Diospyros consolatae* Chiov.
12. *Hibiscus* sp.
13. *Vangueria madagascariensis* J.F. Gmel.
14. *Harrisonia abyssinica* Oliv.
15. *Acacia brevispica* Harms

8. Kwa Nzii Sacred Grove



Figure 8: Kwa Nzii Sacred Grove in Nzaui Forest

1. *Angraecum affine* Schltr.
2. *Albizia gummifera* (J.F. Gmel.) C.A. Sm.
3. *Turraea mombassana* Hiern ex C. DC.
4. *Rothmannia urcelliformis* (Hiern) Robyns
5. *Clerodendrum* sp.
6. *Dracaena steudneri* Engl.
7. *Croton megalocarpus* Hutch.
8. *Oxyanthus* sp.
9. *Vangueria infausta* Burch.
10. *Dracaena laxissima* Engl.