ECOHAVEN

LA MOTTE À THÉRÈSE

Ecological Restoration, Native Plant Conservation & Living Museum Management Plan

Revised using the Mauritian Wildlife Foundation Plant Survey 2024
and the Living Museum vision of EcoHaven

MANAGEMENT PHILOSOPHY

CONSERVE → RESTORE → COLLECT → STUDY → INTERPRET → TRANSMIT

Primary ecological baseline: Motte à Thérèse Plant Survey 2024
Final report, Mauritian Wildlife Foundation, November 2024

Supplementary baseline: April 2022 botanical survey
Moka, Mauritius | 2026

Executive Summary

La Motte à Thérèse is an isolated hill in central Mauritius, approximately 454-505 m above sea level, containing a heterogeneous mosaic of native and alien vegetation. The 2024 Mauritian Wildlife Foundation (MWF) survey confirms that the site is a critical biodiversity hotspot and provides a substantially stronger ecological baseline for restoration than was previously available.

Sixteen transects were surveyed between 26 September and 24 October 2024. The work documented 45 native/endemic plant species and mapped rarer species and representative populations using GPS and QGIS. Particularly important findings include three Acanthophoenix rubra and one Cordyline mauritiana, both reported as Critically Endangered in the survey, as well as very small populations of Eugenia orbiculata, Syzygium contractum, Erythrospermum monticolum, Securinega durissima, Molinaea alternifolia, Grangeria borbonica and Nuxia verticillata.

This plan therefore adopts a three-layer management model. First, the naturally occurring remnant forest and threatened species are protected as the site's Core Natural Heritage. Second, invaded and degraded areas are progressively restored through targeted invasive alien plant control, assisted natural regeneration and selective enrichment. Third, suitable restored/degraded and visitor-accessible areas are developed as a Living Museum of Mauritian Flora.

FUNDAMENTAL DISTINCTION

The Living Museum is not intended to recreate only the historical plant community of La Motte à Thérèse. It may contain documented indigenous and endemic Mauritian species from different ecological settings for conservation, education and botanical study. These introductions must remain clearly separated in records, mapping and interpretation from naturally occurring flora.

The 2024 survey's recommendations remain the ecological safeguard for all restoration work: gradual rather than sudden alien-plant removal; spatially targeted and species-specific weeding; wet-season intervention; early control of highly invasive species such as Ravenala; protection of native structural species; assisted natural regeneration; assisted seed dissemination; attention to plant-plant interactions; and gradual replacement of invasive Furcraea where it currently provides habitat for endemic geckos.

1. Purpose, Vision and Management Model

1.1 Vision

VISION

To conserve and restore La Motte à Thérèse as a resilient native landscape while developing selected areas as a scientifically documented Living Museum of Mauritian Flora - a place where native plants are protected, propagated, studied, interpreted and transmitted to future generations.

1.2 Objectives

- Protect naturally occurring native and endemic vegetation, with priority given to threatened and very small populations.
- Restore invaded and degraded vegetation progressively without destabilising humid forest microclimates.
- Maintain and strengthen the ecological functions provided by dominant native structural species.
- Develop a curated living collection representing a broad diversity of Mauritian indigenous and endemic flora.
- Provide the public with an accessible place to discover and learn to recognise Mauritian native plants.
- Provide naturalists, students, researchers and amateur botanists with mapped and accessioned reference specimens.
- Support threatened-plant conservation, propagation, phenology monitoring and knowledge transfer.
- Maintain a permanent distinction between wild/native occurrences, ecological restoration plantings and Living Museum accessions.

2. Scientific Baseline - MWF Plant Survey 2024

2.1 Survey Design

The 2024 survey was conducted over 11 field days using 16 transects of varying length. For sampled plants, the survey recorded geographical coordinates, elevation, species identification, health status, height, life stage and reproductive/phenological observations. The resulting dataset was analysed and used to develop species-distribution and biotope maps.

2.2 Site Characteristics

La Motte à Thérèse lies between L'Avenir, Alma and Verdun and is surrounded predominantly by sugarcane. A rivulet crosses the site. The 454-505 m elevation range and heterogeneous topography create multiple microhabitats. The eastern flank supports a greater concentration of native species.

2.3 Biodiversity Significance

Indicator	2024 survey finding	Planning implication
Plant richness	45 native/endemic species documented	Manage as a high-value conservation site, not simply a planting area.
Critically Endangered	Acanthophoenix rubra: 3; Cordyline mauritiana: 1	Immediate individual-level protection and microhabitat management.
Endangered	Eugenia orbiculata: <3; Syzygium contractum: 3	Protect all known individuals and recruitment zones.
Other small populations	Erythrospermum monticolum ~6; Securinega durissima ~4; Molinaea alternifolia 4; Grangeria borbonica <10	Priority release, monitoring and propagation where appropriate.
Epiphytes / ferns	Large populations of native orchids and ferns recorded	Avoid sudden canopy opening and drying.
Associated fauna	Phelsuma cepediana, Zosterops mauritianus, native bees, endemic snails and other fauna observed	Restoration must preserve habitat structure, not plants alone.

3. Ecological Structure and Priority Native Species

3.1 Native Structural Species

The 2024 survey identifies Dracaena reflexa, Homalium paniculatum and Nuxia verticillata as dominant native woody species with positive ecological functions. Their dominance should not be interpreted as a restoration problem.

Species / group	Ecological function identified by survey	Management response
Dracaena reflexa	Soil stabilisation, structural complexity and habitat/basking sites	Retain and use as a native structural framework.
Homalium paniculatum	Shade, humid microenvironment and facilitation of other plants	Protect mature trees and regeneration; monitor phenology.
Nuxia verticillata	Microsites for orchids, ferns and epiphytes; shelter for fauna	High-priority protection; conserve associated microhabitats.
Native tree ferns / fern communities	Microclimate and possible plant-plant facilitation	Protect and propagate where ecologically justified.
Orchids / filmy ferns / mosses	Indicators of humid high-quality forest microhabitats	Buffer from abrupt exposure and physical disturbance.

4. Spatial Management Framework

The 2024 biotope map should be used as the operational base map. Its boundaries are indicative rather than absolute because vegetation patches overlap and may change over time. The map distinguishes native-dominated, Dracaena-dominated, Ravenala-mixed, Hedychium-dominated, Eucalyptus-dominated, Privet-dominated, grass, Clidemia/Ossaea, liana-dominated and other patches.

Management zone	Purpose	Treatment
A - Core Natural Heritage	Protect native-rich areas and threatened wild populations	Minimal disturbance; individual-level protection; carefully targeted IAS control.
B - Native Structural Forest	Protect Dracaena/Homalium/Nuxia framework	Release native trees progressively; retain canopy and microhabitats.
C - Assisted Restoration	Recover invaded mixed vegetation	Phased IAS control + natural regeneration + selective enrichment.
D - High-Invasion Intervention	Ravenala, Privet, Hedychium, Clidemia/Ossaea and other priority patches	Species-specific control and intensive follow-up, while retaining native refuges.
E - Eucalyptus Transition	Progressive conversion of exotic-dominated canopy	Avoid abrupt landscape-scale opening; establish native structure progressively.
F - Living Museum Collections	Curated Mauritian native/endemic collections	Documented introductions with accession numbers and interpretation.
G - Threatened Species Conservation	Managed conservation collection outside sensitive wild populations	Propagation, provenance records, monitoring and controlled access.
H - Botanical Learning Trail	Public learning and interpretation	Labels, QR information, safe paths and themed collections.
I - Research & Phenology	Study and comparative observation	Mapped accessions and systematic flowering/fruiting/growth records.
J - Rivulet / Special Microhabitats	Protect drainage and humid habitat features	Assess before works; protect riparian and sensitive flora.

5. Priority Conservation Actions

5.1 Threatened Wild Plants

Known threatened plants must be treated as fixed conservation assets. Before any weeding, trail construction or planting, their GPS locations should be checked in the QGIS dataset and physically confirmed in the field.

- Establish no-damage working buffers around the sole recorded Cordyline mauritiana and the three recorded Acanthophoenix rubra.
- Give equivalent priority to the very small populations of Eugenia orbiculata, Syzygium contractum and other rare species.
- Record health, life stage, canopy condition, flowering/fruiting and threats during routine monitoring.
- Do not use Living Museum planting to obscure or replace naturally occurring populations.
- Where propagation is undertaken, retain provenance and mother-plant information.

6. Invasive Alien Plant Management

6.1 Principle: Gradual, Targeted and Species-Specific

The 2024 survey warns that sudden clearing can dry the site and cause physiological shock and delayed mortality, especially for plants dependent on high relative humidity. Restoration therefore proceeds by releasing native vegetation progressively rather than clearing large areas indiscriminately.

Survey recommendation	Operational application
Gradual alien-plant weeding	Open the canopy progressively, especially around sensitive understorey and the sole Cordyline mauritiana.
Spatially targeted weeding	Prioritise threatened plants, larger native trees, native-rich patches and high-value microhabitats.
Species-specific weeding	Target fast-reproducing smaller weeds such as Ossaea/Clidemia strategically instead of removing all alien vegetation at once.
Wet-season weeding	Concentrate major release work in wetter periods to reduce hydric stress.
Control before seed ripening	Schedule priority IAS work to reduce replenishment of the seed bank.
Early Ravenala control	Treat limited/high-risk Ravenala populations before they expand.

Survey recommendation	Operational application
Protect heterogeneous habitats	Retain variation in slopes, flats, canopy and microhabitats.
Follow-up maintenance	Revisit treated patches repeatedly; restoration is not a one-off clearance.

6.2 Use of Herbicides

The 2024 survey discusses an integrated approach in which manual/spaced-out weeding is preferred where feasible, while selective herbicide use may be considered for significant or difficult invasions. Any chemical control under this plan must be undertaken only by trained personnel under the organisation's approved environmental, health and safety procedures and site-specific protocols.

6.3 Furcraea and Faunal Habitat

Furcraea is invasive but the survey observed endemic Phelsuma cepediana using it for cover and egg-laying. Removal should therefore be progressive, with replacement habitat established before local Furcraea cover is substantially reduced. The survey suggests native Pandanus as replacement structural habitat; final species selection should be botanically verified before implementation.

7. Assisted Natural Regeneration

Natural regeneration is the preferred ecological restoration mechanism in suitable native and mixed vegetation. The survey recommends allowing native seedlings to respond after alien-plant release rather than automatically filling every treated area with nursery-grown stock.

- Mark naturally regenerating native seedlings before maintenance.
- Maintain suitable shade and litter conditions around recruits.
- Assess recruitment after IAS control before prescribing enrichment planting.
- Use assisted seed dissemination where natural dispersal is insufficient and where seed provenance is known.
- Protect regeneration from trampling and, where confirmed necessary, from introduced hoofed mammals.

8. Ecological Enrichment Planting

Enrichment planting within ecological restoration zones differs from Living Museum planting. Its purpose is to strengthen ecosystem structure and recovery. Species choice should consider the local microhabitat, existing native assemblage, ecological function, provenance and the need to avoid damaging natural regeneration.

ECOLOGICAL RESTORATION RULE

Within Core Natural Heritage and Assisted Restoration zones, natural regeneration and protection of existing native plants take precedence over planting targets.

9. Living Museum of Mauritian Flora

The Living Museum is an additional conservation and education function of EcoHaven. It is deliberately broader than ecological restoration and may contain Mauritian indigenous and endemic plants whose natural distribution is outside the historical La Motte plant community.

9.1 Collection Selection Criteria

- Mauritian indigenous or endemic status and botanical significance.
- Conservation and propagation value.
- Educational value for identification and interpretation.
- Suitability for the available microsite or ability to be maintained responsibly.
- Legitimate and traceable source material.
- Low risk of compromising naturally occurring vegetation or confusing future ecological surveys.

9.2 Indicative Thematic Collections

Collection	Educational / conservation purpose
Ebony Collection	Compare Mauritian Diospyros species and explain ebony heritage.
Native Palms	Showcase palm diversity, rarity and conservation.
Pandanus / Vacoa	Compare form, habitat and ecological roles.
Hibiscus & Trochetia	Interpret threatened flowering plants and Mauritian botanical identity.
Eugenia / Syzygium & allied Myrtaceae	Comparative identification and threatened-species interpretation.
Dry & Lowland Flora	Represent native plants from drier Mauritian ecosystems.
Sub-humid & Humid Flora	Interpret wetter forest flora and microclimate adaptations.
Ferns & Fern Allies	Teach fern diversity and forest humidity relationships.
Native Orchids	Interpret orchid diversity under controlled suitable conditions.
Rare Shrubs & Small Trees	Bring lesser-known species into accessible comparative study.

10. Scientific Integrity: Wild vs Restoration vs Collection

Because the Living Museum intentionally introduces species beyond La Motte's historical ecological assemblage, strict documentation is essential. Every plant record should identify its status as one of three categories: WILD/NATURAL, RESTORATION PLANTING, or LIVING MUSEUM ACCESSION.

Category	Meaning	Required record
WILD / NATURAL	Naturally occurring individual or population	GPS, survey ID, species, condition and monitoring history.
RESTORATION	Planted to support ecological recovery	Species, provenance, planting date, zone and survival.
LIVING MUSEUM	Curated botanical accession	Full accession record, source, GPS, label and collection theme.

SCIENTIFIC SAFEGUARD

A future botanist must be able to determine whether a species was naturally present at La Motte à Thérèse or deliberately introduced by EcoHaven.

11. Botanical Accession System

Field	Minimum information
Accession ID	Unique permanent code, e.g. LMT-DIONOD-001
Scientific name	Verified current name
Common name	Mauritian name where available
Family	Botanical family
Collection category	Wild / Restoration / Living Museum
Source / provenance	Locality, nursery or conservation source
Mother plant	ID/GPS where known
Propagation method	Seed, cutting, division or other
Planting date	Date introduced

Field	Minimum information
GPS	Mapped position
Collection theme	Ebony, Palm, Pandanus, etc.
Conservation status	Verified current status
Phenology	Flowering, fruiting/sporing
Condition	Health, growth, mortality and interventions

12. Botanical Learning Trail and Public Interpretation

The visitor experience should allow a person with little botanical knowledge to leave the site recognising Mauritian native plants and understanding why they matter. Public access should be concentrated on defined trails away from fragile wild populations.

- Permanent botanical labels with common/scientific name, family, origin, conservation information and accession number.
- QR-linked extended profiles, photographs and identification features.
- Interpretive panels explaining endemicity, forest types, invasive species, restoration, pollination and seed dispersal.
- Clearly marked distinction between 'naturally occurring at La Motte' and 'Living Museum collection'.
- Viewing rather than unrestricted access around rare wild populations and sensitive orchid/fern areas.
- Guided walks, school activities and plant-identification workshops.

13. Research, Naturalist and Phenology Functions

The 2024 survey already established a foundation for phenological and spatial monitoring. The Living Museum should extend this into a long-term botanical observatory.

- Maintain the 2024 transects or permanent monitoring points where practical.
- Repeat abundance/condition assessments to measure restoration response.
- Record flowering, fruiting and sporing of selected wild and accessioned species.
- Use QGIS to maintain species, accession, intervention and monitoring layers.
- Allow supervised comparative study of related species.
- Develop photographic and identification references for training.
- Support propagation trials and research partnerships where appropriate.

14. Nursery and Propagation

Nursery production should serve two distinct purposes. Ecological-restoration stock should be selected for site function and appropriate provenance. Living Museum stock can be sourced more broadly from legitimate Mauritian conservation material because the objective is curated representation rather than strict reconstruction of the local plant community.

- Maintain traceable seed/propagule source records.
- Keep Living Museum material clearly separated from local restoration batches.
- Verify plant identity before permanent accession.
- Prioritise healthy root systems and hardened planting stock.
- Use propagation of threatened species as a conservation and knowledge-building activity, subject to appropriate permissions and partnerships.

15. Rivulet, Soil and Special Microhabitats

The rivulet and humid microhabitats should be treated as conservation features. Any drainage, access or landscape works should be preceded by a botanical check. Native structural vegetation, rocks, litter and shaded microsites should be retained where they support ecological function.

Because the 2024 analysis found only a weak relationship between elevation and plant height, restoration prescriptions should not rely on elevation alone. Soil, moisture, canopy, microclimate, disturbance and species interactions should guide site-level decisions.

16. Monitoring Framework

Indicator	Baseline / focus	Frequency	Success direction
Threatened wild plants	Known GPS populations from 2024	Quarterly/6-monthly	Stable or improving health and recruitment
Native regeneration	Restoration plots/transects	6-monthly	Increasing native recruits and diversity
IAS cover/regrowth	Biotope/intervention zones	3-6 monthly	Progressive reduction without canopy shock
Orchid/fern microhabitats	Sensitive native-rich areas	6-monthly	Stable humidity-associated flora
Living Museum survival	All accessions	Quarterly initially	High establishment and accurate records
Phenology	Selected wild/accessioned plants	Monthly/seasonal	Growing multi-year flowering/fruiting dataset
Faunal use	Geckos, birds, pollinators and other observations	Seasonal/opportunistic	Habitat use maintained or improved
Visitor impact	Trail and sensitive boundaries	Quarterly	No expansion of trampling/disturbance
Data quality	GIS/accession database	Annual audit	Complete and traceable records

17. Adaptive Management Rules

Observation	Management response
Natural regeneration strong	Reduce enrichment planting and protect recruits.
Sensitive flora drying after weeding	Slow intervention rate and restore shading/buffer conditions.
Ravenala or other high-risk IAS expanding	Increase targeted early control.
Furcraea removal reduces gecko habitat	Pause local removal and establish replacement structure first.
Living Museum accession repeatedly fails	Review microsite, horticultural needs or discontinue that location.
Previously unknown native population discovered	Upgrade conservation priority and revise work boundary.
Visitor pressure reaches sensitive zone	Redirect trail or install controlled barrier.

18. Implementation Programme

Phase	Priority actions	Indicative output
Phase 1 - Secure & Map	Validate 2024 GPS/QGIS data; mark threatened plants; confirm zones; establish monitoring	Protected conservation baseline
Phase 2 - Priority Release	Target rare plants, structural native trees and early-stage high-risk invasives	Reduced immediate ecological pressure
Phase 3 - Progressive Restoration	Wet-season phased IAS control, natural regeneration, seed assistance, follow-up	Recovering native vegetation
Phase 4 - Living Museum Establishment	Create first thematic collections and accession system	Curated documented collection
Phase 5 - Interpretation & Access	Develop learning trail, labels, panels and controlled visitor routes	Public education function
Phase 6 - Research & Expansion	Phenology, propagation, collection expansion and partnerships	Botanical study resource
Phase 7 - Long-Term Curation	Maintenance, IAS surveillance, monitoring, database and collection management	Permanent conservation asset

19. Governance and Operational Responsibilities

Function	Core responsibility
Ecological restoration lead	Plan intervention sequence, work zones and monitoring.
Botanical/conservation partner	Species verification, threatened-species advice and scientific review.
Nursery team	Propagation, accession preparation, plant quality and traceability.
GIS/data custodian	Maintain maps, wild populations, accession points and intervention layers.
Field restoration team	Implement approved weeding, planting and maintenance safely.
Education/visitor team	Interpretation, guided activities and visitor management.
Management review	Approve annual priorities, resources and adaptive changes.

20. Expected Outcomes

- Protection of La Motte à Thérèse's naturally occurring threatened and endemic flora.
- Recovery of native forest structure through gradual and evidence-based invasive control.
- Improved survival and recruitment around native structural trees and sensitive microhabitats.
- Reduced risk from Ravenala and other priority invasive alien plants.
- A scientifically documented Living Museum representing a broad diversity of Mauritian flora.
- A threatened-species conservation collection complementary to wild populations.
- A botanical learning landscape for schools, communities and the general public.
- A reference resource for naturalists, amateur botanists, students and researchers.
- A long-term GIS, accession and phenology dataset supporting conservation management.
- A permanent site linking ecological restoration, ex-situ conservation, education and botanical science.

21. Conclusion

The 2024 MWF survey confirms that La Motte à Thérèse is not an empty or uniformly degraded site awaiting reforestation. It is a heterogeneous and biologically important remnant landscape containing threatened plants, native structural species, orchids, ferns and associated fauna. Restoration must therefore begin by protecting and releasing what already survives.

At the same time, La Motte à Thérèse has the potential to serve a wider conservation purpose. By placing the Living Museum in suitable restored and accessible areas, EcoHaven can assemble and interpret Mauritian native flora beyond the site's historical ecological community without compromising the integrity of the remnant forest.

LONG-TERM IDENTITY

La Motte à Thérèse should function simultaneously as a protected remnant ecosystem, an active restoration landscape, a conservation collection, an outdoor botanical classroom and a long-term resource for the study of Mauritian flora.

Source Basis

Primary source: Mauritian Wildlife Foundation, Motte à Thérèse Plant Survey 2024, final report compiled by Ashmi Bunsy with contributions from Vanousha Pillay, Rameshwar Dijumbur and Pascal Mucktoom, November 2024. The April 2022 botanical survey is retained as a supplementary historical baseline. The Living Museum concept and its broader collection philosophy are management objectives of EcoHaven and are intentionally distinguished from the ecological findings of the MWF survey.