

Interim Translocation Progress Report

Project: 46935-1_Pascal-Sibomana

Project Title: Rwanda's Miniature Water Lily (*Nymphaea thermarum*) Endangered Species Recovery

Reporting Period: September 2025

Principal Investigator: Pascal Sibomana

sibomanapascal20@gmail.com

1. Introduction

The project aims to safeguard *Nymphaea thermarum*, a critically endangered and microendemic water lily rediscovered in Rwanda in 2023. Recognized as extinct in the wild by the IUCN, the species faces severe threats from habitat degradation and human activities at its natural site, Mashyuza hot spring. This initiative is establishing a secure backup population through translocation to the university of Rwanda's Rwasave Fish Ponds, where controlled conditions allow for long-term monitoring and conservation research.



© 2025 Pascal Sibomana. All Rights Reserved

[Photo A: Rediscovery site near Mashyuza hot spring, Serving as the remaining wild habitat of *N. thermarum*]

2. Site Preparation

During this period, we completed preparation of a 10x22 m translocation plot at the University of Rwanda research facility at Rwasave Fish Pond. Within the plot we have marked ten experimental subplots; each subplot is a 1x1 m treatment unit within the larger block layout and will serve as the initial planting trial area. We started with translocation of 50 individuals (5 individuals per subplot) as a phased pilot to test establishment protocols and micro habitat suitability before expanding plantings across the whole pond. Substrate conditioning and water-level control have been adjusted to better mimic Mashyuza's microhabitat. This phased approach allows us to measure survival and growth under controlled conditions, refine planting density and timing, and scale up the translocation using evidence-based methods.



© 2025 Pascal Sibomana. All Rights Reserved

[Photo B: a designated pond for *N. thermarum* related research at Rwasave]



© 2025 Pascal Sibomana. All Rights Reserved

[Photo C: Preparing the pond for *N. thermarum* related research at Rwasave]



© 2025 Pascal Sibomana. All Rights Reserved

[Photo D: Preparing the pond for *N. thermarum* related research at Rwasave]



[Photo E: Preparing the pond for *N. thermarum* related research at Rwasave]

3. Experimental Design

The field was divided into ten blocks, with 5 individuals of *N. thermarum* planted per block, totalling 50 individuals. This randomized Complete Block Design (RCBD) was selected to minimize environmental variability within the site and allow robust statistical comparisons of plant survival and growth. The uniform planting density will also generate insights into optimal conditions for future scaling of conservation actions.



© 2025 Pascal Sibomana. All Rights Reserved

[Photo F: Experimental block design installation]



[Photo G: Experimental block design divisions installation]

4. Translocation Procedure (Completed)

Following site adjustments, the first phase of translocation was successfully carried out. 50 individuals of *N. thermarum* were carefully transported and planted under controlled conditions designed to minimize transplant stress. Each plant was labelled with a durable white tag bearing its accession number, ensuring accurate tracking throughout the monitoring period. Red flags were placed at the edges of each block to clearly mark plot boundaries and facilitate consistent field observations.

Tagging and block marking are widely recognized best practices in plant conservation translocations, as recommended by the **IUCN Guidelines for Reintroduction and Other Conservation Translocations (2013)**. These measures enable long-term monitoring of individual survival, growth, and reproductive success, while ensuring data remain reliable and comparable over time. Similar approaches in aquatic plant translocations (Blindow 2021; Markwell et al., 2008) emphasize the importance of clear labelling and plot marking to evaluate establishment success and refine planting strategies. By following these standards, this project is building a robust evidence base to maximize the chances of success for *N. thermarum* and to inform future recovery efforts for other threatened aquatic plants.



[Photo H: Potted individuals of *N. thermarum* in the nursery ready for transfer]



[Photo J: Potted individuals of *N. thermarum* from the nursery ready for transfer]



[Photo K: Red flags marking the plot end, and white tags equipped with accession number assigned to the individuals of *N. thermarum* within subplot]



[Photo L: Showing 5 individuals of *N. thermarum* translocated within subplot]

5. Monitoring Plan

A standardized monitoring framework is in place. Data will be collected on plant survival, growth rates, flowering, and seed production. Monitoring will occur weekly during the first three months, followed by monthly assessments. Data will be analysed statistically to identify trends and refine management approaches.



[Photo M: Field data collection during monitoring activities]

6. Expected Outcomes

By the next reporting period, we expect the successful translocation of 50 *N. thersites* individuals into the Rwasave site. Early monitoring results will provide critical data on survival rates and reproductive potential, helping to refine conservation strategies. This effort will contribute directly to the establishment of a viable backup population, ensuring the long-term survival of this iconic Rwandan species.



[Photo N: Showing flower of *N. thermarum*]

References

Iucn, S. S. C. (2013). Guidelines for reintroductions and other conservation translocations. *Gland Switz Camb UK IUCNSSC Re-Introd Spec Group*, 57.

Blindow, I., Carlsson, M., & van de Weyer, K. (2021). Re-Establishment techniques and transplantations of charophytes to support threatened species. *Plants* 2021, 10, 1830. *Macrophytes in Inland Waters*, 127.

Markwell, H. J., & Halls, J. M. (2008). Translocation of a nationally scarce aquatic plant, grass-wrack pondweed *Potamogeton compressus*, at South Walsham Marshes, Norfolk, England. *Conservation Evidence*, 5, 69.