# Five-Month Progress Report on the Conservation Project for Arthroleptis kidogo at Mkingu Nature Forest Reserve

Project number: 43360 - 1
Project Title: Safeguarding the Critically Endangered Tiny Squeaker frog (*Arthroleptis kidogo*) in Mkingu Nature reserve, Tanzania.
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# 1. Introduction

This report provides a comprehensive update on the progress made during the first five months of the conservation project focusing on *Arthroleptis kidogo*, a critically endangered amphibian species, at Mkingu Nature Forest Reserve in Tanzania. The key objectives of the project are to estimate the population size of *A. kidogo*, assess its habitat preferences, and engage local communities in conservation efforts. This report summarizes the activities completed, the findings to date, challenges encountered, and planned next steps.

# 2. Project Progress

# 2.1. Project initiation and stakeholder engagement

The initiation phase involved extensive engagement with relevant stakeholders, including Mkingu Nature Forest Reserve management, local authorities, and community leaders. Key accomplishments during this phase include:

- **Permit acquisition**: The Reserve Conservation Officer granted all necessary permits for conducting fieldwork within Mkingu Nature Forest Reserve. Camping permits were also obtained to facilitate the project's field-based activities.
- Stakeholder collaboration: Formal meetings were held with local government representatives and community leaders from adjacent villages, notably Maskati and Ubir village, which is located within the reserve. These discussions were instrumental in securing local support for the project, ensuring smooth implementation, and enhancing community participation.
- **Community engagement**: Efforts to raise awareness about *A. kidogo's* conservation needs are in ongoing. Informational materials, including flyers and posters, were distributed in local communities, and informal workshops were conducted to introduce the project's objectives and engage local stakeholders in its implementation.

# **2.2.** Field Surveys for population estimation and habitat analysis

Field surveys were conducted to estimate the population size of *A. kidogo* and assess its distribution across various habitats within the reserve. The methodologies employed included:

- **Transect walks and active searches**: A combination of systematic transect walks and active searches were conducted to gather data on the population size and distribution of *A. kidogo*. The surveys covered a wide range of habitats, from dense forest areas to more disturbed sites.
- **Preliminary population estimates**: Preliminary results indicate a fragmented distribution of *A. kidogo*, with higher population densities found in areas characterized by dense leaf litter and greater canopy cover.

• Habitat Characterization: Habitat parameters such as leaf litter depth, humidity, canopy cover, and proximity to water sources were systematically recorded at survey sites. This data will inform further analysis of the species' habitat preferences.

# 2.3. Habitat Preference Study

A key component of the project is the assessment of habitat preferences for *A. kidogo*, which is critical for identifying conservation priorities. The findings to date include:

- **Preferred micro-habitats**: Preliminary data indicates that *A. kidogo* favors microhabitats with dense leaf litter, moderate humidity, and sufficient canopy cover. These features provide optimal conditions for the species' foraging and reproductive activities.
- Habitat distribution mapping: The collected habitat data will be used to create a detailed map showing the areas of highest ecological suitability for *A. kidogo*. This map will be valuable for guiding future conservation and habitat restoration efforts within the reserve.

# 3. Key findings

- **Population and distribution**: Early field surveys suggest that the *A. kidogo* population is fragmented, with the highest densities located in undisturbed, forested areas that offer abundant leaf litter and moderate humidity. These findings are critical for developing a targeted conservation strategy.
- Habitat preferences: *A. kidogo* is primarily found in areas with dense leaf litter and higher humidity. The species appears to avoid more disturbed habitats, highlighting the importance of preserving undisturbed forest areas for its survival.

# 4. Challenges encountered

While the project has made significant progress, several challenges have been encountered:

- **Difficult terrain**: The reserve's rugged terrain and dense vegetation have posed logistical challenges, particularly in reaching remote survey sites. This has slowed data collection and limited the scope of some surveys.
- **Fragmented populations**: The fragmented nature of the *A. kidogo* population has made it difficult to obtain a comprehensive population estimate. Further surveys are needed to confirm the distribution and density of populations across the reserve.
- **Weather disruptions**: Unpredictable weather conditions, particularly heavy rains, have disrupted fieldwork, making it difficult to maintain consistent data collection schedules.

# 5. Next Steps

Moving forward, the following actions are planned:

- **Expanded surveys**: Additional surveys will be conducted to further refine the population estimate and assess areas of the reserve that have not yet been adequately surveyed.
- **Habitat suitability mapping**: The habitat data collected will be analyzed to produce a detailed habitat suitability map, which will guide future conservation interventions.
- **Community outreach**: The community engagement program will be expanded to include more structured workshops and training for local leaders, farmers, and community members.
- **Data analysis**: A thorough analysis of all collected data will be undertaken to better understand the ecological needs of *A. kidogo* and identify critical areas for conservation.



Figure 1: Field assistant enjoying the view at one of our sampling site @ Eva Johnson



Figure 2. Field assistant during data collection @ Eva Johnson



Figure 3. Field assistants collecting frogs ecological data @ Mataba Lisesi



Figure 4. The team leader (Mataba Lisesi) searching Arthroleptis kidogo



Figure 5. Field assistants in the field proceeding with data collection @Mataba Lisesi



Figure 6. One of our camping site @ Eva Johnson



Figure 7. The team collecting canopy cover data using densiometer @Mataba Lisesi



Figure 8. Team measuring leaf litter in the sites where we sighted the frog @Mataba Lisesi



Figure 9. Arthroleptis kidogo (our targeted species sighted in the forest)

# 6. Conclusion

The first five months of the conservation project at Mkingu Nature Forest Reserve have been marked by significant progress in both scientific research and community engagement. The initial surveys have provided valuable insights into the population size, distribution, and habitat preferences of *Arthroleptis kidogo*, while ongoing community outreach efforts have fostered local support for conservation activities. Despite encountering challenges, the project is on track to meet its goals and will continue to build on these early successes in the coming months.