FIRST PROGRESS REPORT

Title: Conserving *Colobus vellerosus* and *Cercopithecus erythrogaster*: Integrating monitoring, threat assessment, and community engagement in Lokoli Swamp Forest, Benin.

Grant Reference: 49446-2 (2nd Rufford Small Grant)

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Project location: Lokoli Swamp Forest, Zogbodomey, Benin

1. Executive summary

This first progress report presents the activities initiated to date under the 2nd Rufford Small Grant supporting the conservation of *Colobus vellerosus* and *Cercopithecus erythrogaster* in the Lokoli Swamp Forest, southern Benin. As this represents an early reporting stage, most planned activities are ongoing, with several having been successfully initiated and progressing according to schedule.

During the reporting period, the project has focused primarily on establishing the ecological and social foundations necessary for robust conservation outcomes. Field-based primate surveys using line and boat-based transects have been initiated, alongside the deployment of camera traps across selected forest patches. In parallel, preliminary drone flights have been conducted to assess canopy structure and habitat condition. Threat identification activities, combining direct field observations and initial community questionnaires, have also commenced.

Preparatory work for climate change impact assessment has begun through the compilation and verification of species occurrence records and environmental datasets. Overall, the project is progressing well, with no major delays encountered, and remains on track to achieve its planned objectives.

2. Project background and objectives

The Lokoli Swamp Forest is one of the last remaining permanent swamp forests in southern Benin and constitutes a critical refuge for two globally threatened primate species: the White-thighed Colobus (*Colobus vellerosus*, Critically Endangered) and the Red-bellied Guenon

(*Cercopithecus erythrogaster*, Endangered). Despite its ecological importance, Lokoli faces increasing pressure from agricultural expansion, resource extraction, hunting, and habitat degradation, while formal conservation measures remain limited.

This project aims to strengthen conservation planning in Lokoli by generating updated ecological data, identifying and mapping key threats, assessing potential climate-driven changes in species distributions, and fostering inclusive, community-based conservation grounded in ethical engagement.

Photo 1: Aerial drone view of the Lokoli swamp forest canopy.

Photo 2: Flooded Forest channel characteristic of the lokoli swamp forest ecosystem.

The specific objectives of the project are to:

- assess the population status and spatial distribution of both target primate species;
- identify, quantify, and spatially map anthropogenic threats affecting primates and their habitat;
- model current and future species distributions under climate change scenarios;
- promote participatory conservation through meaningful engagement with local communities.

3. Progress against planned outcomes

3.1 Outcome 1: Population status and distribution of target primate species

Substantial progress has been made toward Outcome 1 through the initiation of complementary ecological monitoring approaches adapted to the swamp forest context.

Transect surveys: Systematic primate surveys have been initiated along pre-established transects of approximately 1.5–2 km, adapted to flooded and seasonally accessible areas. Surveys are conducted using both pedestrian and boat-based methods, depending on site conditions. For each primate detection, observers record species identity, estimated group size, behaviour, and GPS coordinates. These data will later support density estimation and spatial distribution analyses.

Camera trap deployment: Camera traps have been deployed across selected forest patches representing key microhabitats. The cameras are currently operating within planned deployment cycles and are collecting continuous data on primate presence, activity patterns, and potential interactions with anthropogenic activities. Initial checks confirm good functionality and data quality.

Drone-Based canopy surveys: Preliminary drone flights have been conducted using a lightweight UAV equipped with an RGB camera. Flights follow predefined transects at altitudes of approximately 60–100 m. The imagery collected provides initial information on canopy structure, disturbance patterns, and potential arboreal movement pathways, complementing ground-based observations. Further flights are planned as part of ongoing data collection.

Photo 3: Preparation and deployment of drone equipment for canopy and habitat assessment.

Photo 4: Installation of camera traps in the Lokoli Swamp Forest

3.2 Outcome 2: Identification and spatial mapping of key threats

Activities related to Outcome 2 have been initiated alongside ecological surveys.

Field-Based threat assessments: Direct field observations have been conducted to document signs of logging, agricultural encroachment, hunting activities, and other anthropogenic pressures. Each observation is georeferenced and characterized by threat type and apparent intensity, forming the basis for subsequent spatial analyses.

Community questionnaires: Initial questionnaires with local residents and forest resource users have been carried out to document perceived threats, drivers of forest degradation, and observed changes in wildlife abundance. These qualitative data provide essential socio-ecological context and will be integrated with spatial threat mapping as data collection continues.

Photo 5: Wood stockpiling for charcoal production as a driver of forest degradation in Lokoli Swamp Forest.

Photo 6: Artisanal alcohol production as a local resource-use activity within the lokoli swamp forest.

Photo 7: Administration of community questionnaires and participatory mapping with local forest users.

3.3 Outcome 3: Climate change impact assessment (initial progress)

As this outcome is scheduled for later stages of the project, progress to date has focused on preparatory tasks. Occurrence records derived from transect surveys, camera traps, and existing datasets are being compiled and verified. In parallel, relevant environmental variables, including land cover, topography, and bioclimatic layers, are being assembled and harmonized in preparation for species distribution modelling under current and future climate scenarios.

4. Methods implemented during the reporting period

All methods implemented during this reporting period are consistent with those approved in the original project proposal and reflect established best practices in primate ecology and conservation science. The combined use of transect surveys, camera trapping, and drone imagery allows for complementary coverage of both ground-level and canopy-level

processes in a challenging swamp forest environment. Threat assessments integrate direct ecological observations with community-derived knowledge to improve accuracy and relevance.

5. Ethical considerations and community engagement (FPIC)

Ethical engagement with local communities has been a priority from the outset of the project. A Free, Prior and Informed Consent (FPIC) process has been implemented through village-level meetings and individual discussions. Research objectives, methods, intended data use, potential risks and benefits, and the voluntary nature of participation are clearly explained to all participants.

Verbal consent is obtained prior to questionnaires, and records are maintained. Traditional Ecological Knowledge shared by community members is explicitly acknowledged, and permission is sought for any intended use in publications or reports. Community representatives will be given the opportunity to review outputs that incorporate local knowledge. This approach aligns with ethical guidelines promoted by the IUCN Primate Specialist Group and supports inclusive and respectful conservation practice.

Photo 8: Meeting with local authorities responsible for forest management

6. Preliminary outputs and data generated

At this early stage, the project has generated preliminary datasets including:

- initial primate sighting records with spatial coordinates;
- camera trap image and video datasets currently under review;
- georeferenced records of observed anthropogenic threats;
- qualitative interview notes documenting community perceptions of forest use and wildlife trends.

These datasets will be expanded and refined as field activities continue.

7. Challenges encountered and mitigation measures

Fieldwork in swamp forest conditions presents logistical challenges, including difficult access, and variable weather conditions. These constraints have been mitigated through flexible scheduling, the use of boats, and close collaboration with experienced local guides. To date, no major delays have been encountered, and activities remain on schedule.

8. Work plan for the next reporting period

Planned activities for the next reporting period include:

- continued camera trap monitoring and data extraction;
- expansion of transect surveys to additional forest patches;
- completion of planned community interviews;
- continued drone-based canopy surveys;
- development of species distribution models under current and future climate scenarios;
- preparation of preliminary spatial maps and analytical outputs.

9. Conclusion

This first progress report reflects a strong and steady start to the project. Core activities have been successfully initiated, and the project is progressing as planned despite the logistical challenges inherent to swamp forest environments. The foundations have now been laid for more detailed ecological analyses, threat mapping, and climate impact assessments in the coming months. Continued engagement with local communities remains central to the project's approach, ensuring that conservation outcomes are both scientifically robust and socially grounded.

10. Acknowledgements

The project team would like to express its sincere gratitude to **The Rufford Foundation** for the financial support provided through the 2nd Rufford Small Grant, which made the initiation of this project possible. This support has been instrumental in launching field activities, deploying monitoring tools, and strengthening conservation efforts for threatened primate species in the Lokoli Swamp Forest.

We also warmly acknowledge **Naben**, the local conservation NGO supporting this project, for its administrative assistance, logistical coordination, and long-standing commitment to biodiversity conservation in Benin.

Special thanks are extended to the field assistants and local guides, whose knowledge of the forest, dedication, and continuous support have been essential to the successful implementation of field surveys, camera trap deployment, drone operations, and community-based activities. Their

experience and collaboration have significantly contributed to the smooth progress of the project.

Finally, we thank the local communities surrounding the Lokoli Swamp Forest for their cooperation, openness, and willingness to engage in conservation-related activities and data collection. Their participation remains central to the long-term success of this initiative.