

Project Title: Identifying Environmental factors affecting the habitat of Gray Crowned Crane (*Balearica regulorum*) in and around Nyungwe National Park, Rwanda



Progress Report to The Rufford Foundation

Rufford Small Grant 1

Compiled by Claver Ntoyinkima

July10, 2022

Introduction

Rwanda's four national parks namely Akagera National Park, Volcanoes National Parks, Nyungwe National Park and Gishwati-Mukura National Park are the most areas set aside for conservation of biodiversity. These national parks provide suitable habitats for 703 bird species as reported (*Gaël 2018*). However, there are also many avifauna species, which forage, breed at the forest edges and farmlands. Among the birds found at the edge of natural habitat and farmlands include vulnerable and endangered species that are on IUCN red list including Grey Crowned Crane (*Balearica regulorum*) and are overlooked for their protection. Grey Crowned Crane has been up-listed to Endangered because threats such as habitat loss and the illegal removal of birds and eggs from the wild have driven very rapid declines up to 80% during the past 45 years (AEWA 2015). Through, Rufford Small Grants, I received generous grant to implement one year project entitled "Identifying Environmental factors affecting the habitat of Gray Crowned Crane in and around Nyungwe National Park Rwanda". This grant made possible to start project activities and therefore, this narrative report summarizes progress of the implementation of this project activities.

The goal of this study is to provide scientific information necessary for park manager to make decisions on the conservation of Grey Crowned Cranes, and prevent local extinction of this Endangered species. Four specific objectives of this project are: (1) to assess the quality of habitats for Grey Crowned Cranes (2) to identify spatial distribution range of Grey Crowned Cranes in wetlands in and around NNP, (3) to assess the threats facing the Grey Crowned Cranes and its habitat in and around Nyungwe National Park, and (4) to conduct population size survey of Grey Crowned Cranes in selected wetlands around NNP.

Activities accomplished and or in progress

1. Acquisition of research permit and administrative contacts

We processed application and acquired research permit from Nyungwe Management Company/African Park, the company, which is managing Nyungwa National Park on behalf of the Government of Rwanda. We made contacts and meeting with REMA officer at Nyamasheke district, and executive secretary of Bushekeri, Rangiwo, Kagano, and Kanjongo sectors to inform them about the project before field data collection. They all appreciated, supported, and facilitated the implementation of the project

2. Training of field research assistants in data collection techniques

We hired and trained 5 field assistants to collect field data. Two-day training covered major topics including vegetation plot sampling techniques, reconnaissance transect walk and point count sampling for birds, qualitative interview and focus group techniques. We discussed datasheet, key guiding question developed for interview to make sure the team have the same understand and interpretation of datasheet and questions.

We also trained field assistant how to use GPS to collect geographical locations, and binoculars to collect bird data.



A Photo of field team during the training exercise at Kamiranzovu swamp, Kagano sector © Claver

3. Acquisition of field equipment

Our field activities require field equipment. We purchased, machetes, rain coats, jangle boots, pencils, clipboards, binoculars, gradient metric ruler, quadrature metal and datasheets (printed) and made them available for this project activities implementation. We developed datasheet for vegetation and bird count, interview guiding key questions to guide interview. We also hired a vehicle to facilitate movements from site to site for field data collection, and contacts with administrative local authorities

4. Sampling habitat for Gray-Crowned Crane

We used vegetation plot sampling technique to sample availability and quality of Gray-Crowned Crane's habitat in 5 sites: Kamiranzovu swamp (5 sites plots), Kamiranzovu swamp (2 sites plots inside the park), Karundura 1, Karundura 2, and Banda. In total we collected vegetation data in 57 circular plots.



Photos of field team sampling resource availability of Grey Crowned Crane in Kamiranzovu swamp, Nyungwe National Park. © Claver

5. Counting Gray-Crown Crane in and outside Nyungwe National Park.

We walked transect twice a month (February to June) counting and recoding Grey Crown-Crane on observers' sighting. This activity continues in 19 sites, which were identified as Crane's habitat during our reconnaissance survey. As the reporting time, we sighted and recorded Grey Crown-Cranes in 6 sites and all are outside the park boundary. We also recorded other bird species we encountered in these sites.



A couple of Grey Crowned Crane foraging in a rice harvesting farm at Kamiranzovu swamp. ©Claver



Nest of Grey Crowned Crane with a hatched egg observed Kivu. © Claver in KARUNDURA swamp near Lake

6. Conducting Interview and Focus Group

We conducted qualitative interview with 68 people (18 years old and above) from 16 villages where we sampled habitat and bird counts. We organized 3 focus group discussions to probe more data on cranes and threats to them.



Conducting interview with farmers in wetlands/habitats of cranes in Karundura wetland

7. Habitat disturbance

We assessed threats to cranes in their natural habitats using direct observation and qualitative interview. Preliminary results showed that the main threat or disturbance of habitat of Grey crowned Crane in sampled areas are human activities including agriculture, and fodder collection, but also natural hazards, especially flooding caused by erosion from uphill surrounding the wetlands.



Flooded Grey Crowned Crane's habitat in KARUNDURA swamp © Claver



Rice growing in Kamiranzovu swamp © Claver



Grey Crowned Crane feeding in vegetable growing farm in Karundura swamps © Claver

8. Data entry

We developed data entry template and we progressively entered data as they were collected from the field.

Challenges

During the data collection we faced some challenges that interfered with the scheduled research activities; these include: the long process of acquiring the research permit and weather conditions affected our transportation to the field due the bad roads.

In summary, most of our project activities were implemented as planned in the project proposal. We identified and sampled vegetation in habitat of Grey Crowned Cranes, we counted cranes, conducted qualitative interview with communities, identified threats to cranes and their habitats. Preliminary results from this study shows that Cranes are found in 6 sites and their habitats are threatened by human activities and natural hazards.

Way forwards

We continue to implement the remaining project activities as they were planned in the project proposal:

- Transect walk point count for Grey Crowned Crane and other bird species
- Completion of data entry
- Data analysis and compilation of final project report

- Organize a workshop to present the results and develop management recommendation to key stakeholders
- Publish the results in journal articles