

## Final Evaluation Report

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Your Details	
Full Name	Charles Agbor Emogor
Project Title	Ecology and Conservation of the Endangered, White-bellied Pangolin ( <i>Phataginus tricuspis</i> ) in Cross River, Nigeria
Application ID	31522-1
Date of this Report	29 June 2022

**1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Objective 1: To estimate the home range size of the white-bellied pangolin (WBP).				We successfully tagged five white-bellied pangolins but faced serious challenges in monitoring and gathering robust data to estimate their home range size. The difficulty in data collection was because of the tag's limited battery capacity (we used lightweight tags to meet the mass requirement for white-bellied pangolins).
Objective 2: To quantify pangolin off-take from the CRNP.				We gathered data from over 20 hunters for 24 months and have already begun to analyse and synthesise the data. This strand will be fully achieved by the end of 2022 when we have completed data analyses.
Objective 3: Assessing the effectiveness of awareness-raising interventions in increasing knowledge about pangolins (changed from: Implement a community-based intervention to reduce pangolin poaching)				With matching funds from the Conservation Leadership Programme, we have completed the first phase of data collection to assess people's knowledge and attitudes towards pangolins and have successfully completed a series of awareness raising interventions over 5 months. The second phase of data collection to assess trends in levels of awareness will commence in September 2022 and end in December 2022, after which data analyses will begin. This strand will be fully achieved in the first half of 2023 when we have completed the second phase of surveys and data analyses.
Objective 4: To support the formulation of an evidence-based system to identify the geographic origin of seized pangolin (and their derivatives).				We ethically collected pangolin scale samples from 44 white-bellied pangolins (the scales came from pangolins killed by hunters in objective 2). We obtained the needed CITES export permit and have shipped the scales to the Center for Conservation Biology (University of Washington),

				where they will be analysed to form a database for geo-referencing confiscated pangolin scales.
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## 2. Describe the three most important outcomes of your project.

The project is yet to document an outcome, but we envisage the following:

- a). Increased support for local communities to curb pangolin decline through a better understanding of the dynamics of local pangolin harvest and consumption (objective 2).
- b). Reduction in local pangolin exploitation (objective 3).
- c). Facilitation of prosecution of suspected pangolin traffickers using evidence of the geographic origin of confiscated scales (objective 4).

## 3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

Our project faced some setback due to COVID-19-related restrictions. We delayed field activities because of these restrictions.

Finding pangolins was the first project-specific challenge we faced. During our first field season (May-July 2021; predominantly wet season), we only found an infant pangolin, which was not fit for tagging. After chatting with hunters, we planned another fieldtrip in the subsequent dry season, as the encounter rate of pangolins is relatively higher in the dry season. We found over 10 adult pangolins in the next field season and tagged five of them, one of whom we managed to gather scanty data from (Figure 1). Further, VHF telemetry proved difficult during monitoring as it required seeing the pangolin to collect spatial data, which was challenging in a forest, especially as the white-bellied pangolin is nocturnal and semi-arboreal. To overcome this challenge, we opted for GPS telemetry that has the capacity to store spatial data at set times, which can be downloaded when in close range with the individual.

We also faced challenges with objective 2 which was initially aimed at implementing a community-based intervention. Funds from this strand of the project were meant to complement funds from another donor, which, unfortunately, proved difficult to secure. However, with permission from The Rufford Foundation, we changed to objective to a similar community-based project that involved raising and testing levels of awareness of the conservation status of pangolins.

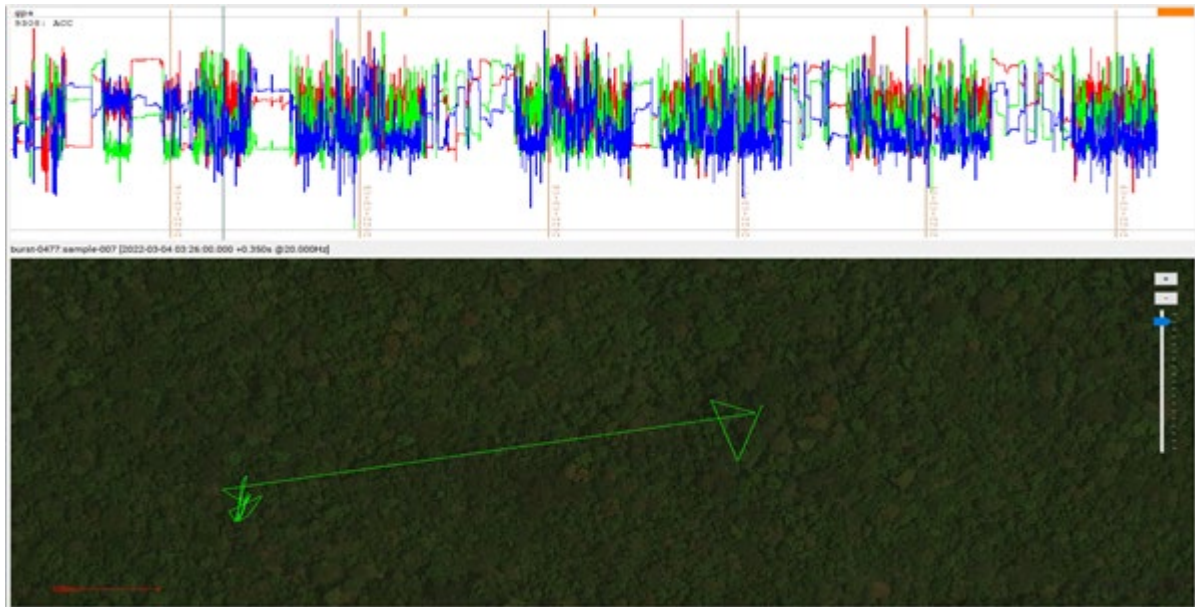


Figure 1: Activity pattern (upper panel) and tracklog (lower panel) of one of the tagged pangolins.

#### **4. Describe the involvement of local communities and how they have benefitted from the project.**

Objectives 2 and 3 actively involved local communities. For objective 2, we gathered data from hunters, providing them monthly souvenir (antiseptic soap). We also later trained some of the hunters on the use of GPS devices, which they used to track collect spatial data of their hunting activities. We didn't tell them specifics of the project (which will possibly bias their reporting) but informed them of the overall aim of the project, which is to gather evidence to inform sustainable wildlife harvesting.

Objective 2 involved over 200 students and 1000 adults across three communities in southeast Nigeria. In addition to engaging them in awareness raising activities such as pangolin film shows and Pangolin Club events, we distributed over 1200 pangolin-branded notebooks and 300 pangolin branded t-shirts to students and adults, respectively.

#### **5. Are there any plans to continue this work?**

I am committed to continue contributing to pangolin conservation in southeast Nigeria. We plan to continue objective 1 when we find suitable tags with bigger battery capacity. Further, we have designed a behaviour change intervention that will mobilise community-level support for pangolins. The project centres on working with communities to create by-laws prohibiting pangolin poaching, empowering them to protect pangolins from the roots up. This project will commence as soon as the required funds are secured.

**6. How do you plan to share the results of your work with others?**

All results from this project will be published in a scientific journal.

**7. Looking ahead, what do you feel are the important next steps?**

I plan to complete data analyses and synthesise the data from this project and secure addition funds for the community-based intervention highlighted earlier.

**8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?**

Yes (see below).

**9. Provide a full list of all the members of your team and their role in the project.**

**Stanley Agbor (research assistant):** Assisted in collecting data from hunters in Agoi Ibami community (objective 2).

**Patrick Aidam (research assistant):** Assisted in collecting data from hunters in Iko Esai community (objective 2).

**Patience Adaje (awareness-raising coordinator):** Planned and ran awareness-raising activities in communities surrounding Nigeria's Cross River National Park where this work was based (objective 3).

**Dominic Ogu (research assistant):** Supported awareness-raising interventions (objective 3).

**Daniel Ingram:** Provided technical support in designing the study (Objective 2).

**Professor Michael Noonan:** Provided technical support in designing the study (objective 1).

**Professor Sam Wasser and Dr Hyeon Jeong Kim:** Extraction of DNA from pangolin samples and formation of geo-referencing database (objective 4).

**Professor Andrew Balmford:** Supervised the entire project and provided technical support.

**10. Any other comments?**

We are grateful to the Rufford Foundation for the financial support, without which this project would not have been possible.







***Pangolins na our heritage,  
make we try protect them***



***Make we join hands  
protect pangolins***



## Why are pangolins Endangered?



### Hunting:

People kill pangolins for meat with guns, wire snares and sometimes even by hand



### Illegal trade:

Scales from pangolins are used, mostly in Asia, to make ineffective 'traditional medicines'



### Deforestation:

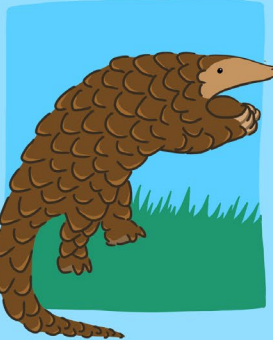
Pangolins lose their homes to forest clearance for wood and farmland, exposing them to poaching



### Electric fences:

In Southern Africa, Temminck's pangolins accidentally die in electric fences in ranches

## How can I save pangolins?



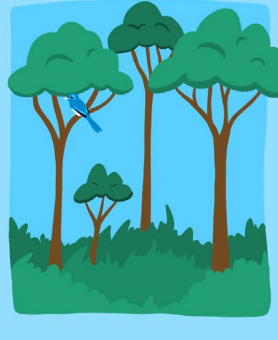
### Protect them:

Do not kill pangolins when you see them. Stop others from killing them



### Raise awareness:

Explain to your family and friends why they shouldn't kill or eat pangolins



### Protect habitat:

Save pangolin habitat by not burning forest for farmland or felling trees



### Report:

Report pangolin poaching and trade to the Nigerian National Park Service

Artwork by Issy Key & Bahdja Boudoua



