

## The Rufford Foundation

### Final Report

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Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to [jane@rufford.org](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
Your name	Nwaogu Chima Josiah
Project title	Reversing the human induced decline of fruit plants in an Important Bird Area in Nigeria: consequences for bird diversity
RSG reference	19094-1
Reporting period	May 2016 – May 2017
Amount of grant	£4988
Your email address	nwaoguchima@yahoo.co.uk
Date of this report	19 <sup>th</sup> May, 2017

**1. Please 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
Identify, classify and map vegetation and land use types around the Amurum Forest Reserve				24 radial transects originating from the centre of the reserve core and extending 300m away from the reserve boundary were surveyed at 50 m intervals (QGIS image of points). We recorded habitat and land use type at each point. 60% of land area surrounding the reserve is cultivated, 30% holds scanty natural vegetation but intensely grazed by cattle and other small ruminants, while the remaining 10% holds residential buildings. Conversion of land for residential building is growing rapidly and this will put pressure on natural vegetation and farmlands. 107 plant species were identified within the reserve, 18 species around the buffer zone and 29 within 200 m outside the buffer zone.
Determine the density, distribution and seasonality of important plants in Amurum Forest Reserve and surrounding habitats				Using points generated from previous objective (1 above). We carried out a modified Point Centre Quarter Method survey. To determine density, we identified and measured the closest plant from the centre of each quarter originating from each point. We measured height of each plant, bole circumference and distance from the point. The distributions of the different species were also determined across the various land use types. Each identified plant was visited at the end of the dry. Start of wet, end of wet and start of dry season to determine the seasonality of each species or the variability in the seasonality within each species.

				(Details of density estimates, distribution and seasonality will be conveyed in the detailed final report).
Community sensitization/Outreach				Consultation with community members were carried out to encourage involvement of community. Eight women and one man from the Laminga community assisted with plant surveys. Town hall meetings were held to discuss the extent of vegetation degradation around the reserve and the need to retain vegetation around farmlands and human settlements (Details of meeting and discussions are conveyed in a video recording to be provided). 15 copies of a plant picture catalogue which will serve as an identification guide for plants of Amurum and surrounding areas has been completed and is been produced. This will be presented to 12 secondary schools around communities surrounding the reserve for teaching and referencing.

**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

**3. Briefly describe the three most important outcomes of your project.**

1. Land use documentation around the Amurum Forest Reserve - land use has been successfully documented around the Amurum Forest Reserve. This is especially important considering the rapid development of human settlement around. Data will be used to produce a land use map which will serve as a reference card for monitoring environment change in the future.

2. Identification and documentation of fruit plant species - a check list of fruit plants has been produced along with a plant picture catalogue for plant identification, phenology studies and basic classification into families. The catalogue is especially targeted at secondary school students' around communities surrounding APLORI – this will point their attention towards the diversity of plants within the environment and so, will allow them realise when such plants begin to get missing or reduced. Information sharing with the APLORI agroforestry and herbarium project has also been established – voucher specimens were collected and stored at the APLORI herbarium and a copy of the picture catalogue will be provided for reference at the APLORI Library.

3. Discovering how fear of crop raiding affects vegetation retention decision around farmlands – through dialogue with communities we discovered that the fear of crop raiding by birds and other animals leads to removal of hedgerows and vegetation around cultivated landscapes. This was a very enlightening discovery for us and we are developing means of studying the extent of crop raiding by birds and monkeys and also how this is influenced by the presence of vegetation around farms.

**4. Briefly describe the involvement of local communities and how they have benefited from the project (if relevant).**

The community was involved with consultation and surveys. The village head of Laminga, Adagwom Izang Azi was delighted with the project and called on the community inhabitants to support it. We educated the local communities on the usefulness of the vegetation held in the reserve and how the birds and other animals play a role in dispersing them. Women especially testified to how uncultivated plants dispersed to their lands by birds provide food for them. We also introduced basic skills in plant identification to a few that were keen on joining us for surveys. The students will benefit from the use of the plant picture catalogue and also from discussions that we plan to have with the schools during its distribution.

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

Yes; having identified fruit plants and land use types around Amurum Forest Reserve and educated the people on the importance of conserving them, the next steps will involve taking practical steps to help inhabitants retain vegetation around home, schools and farmlands. We will continue with studies of fruit plant utilisation by birds and monkeys while we work on determining the extent of crop raiding and identifying factors that may reduce the effect. Follow up visitations will also continue to build knowledge of local plant diversity in school children around the community.

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

The Amurum Forest Reserve is the biological conservatory of the University of Jos and host researchers from various Universities in Europe and America, and so all data collected will be made available for use by other researchers. In addition to educational materials produced as a result of this work, we will compile a video of all activities carried out which can be viewed. The data is being analysed for the more detailed report and a publication for a peer review journal. The publication will highlight how natural vegetation responds to increasing human pressure from settlement expansion around protected areas and the extent of vegetation loss in non-protected landscapes.

**7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?**

The grant has been used over a period of 12 months from the inception of the project. We had anticipated completing field work and preliminary report writing

within 12 months; however, the production of the plant picture catalogue experienced some delays but it's now at the final stages of production. We intend to submit a detailed final report and a peer article within the 3 months.

**8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.**

Item	Budgeted Amount	Actual Amount	Difference	Comments
Nikon Laser 1200S	358.34	414.00	- 55.66	
Nikon D3200 Digital SLR Camera + Case + 32GB Memory Card and 18-55mm VR Lens Kit - Black (24.2MP) 3 inch LCD	437.99	437.99	0	
Garmin GPSMAP 64s Handheld Navigation	329.99	206.00	123.99	
Dell Inspiron 15 5000 Series 15.6 inch Laptop (Intel Core i5-6200U, 8 GB RAM, 1 TB, Integrated Graphics, BT/CAM DVDRW, Windows 10)	549.99	497.98	52.01	
Shipping of purchased equipment	230.00	240.00	- 10.00	
Allowance for field assistant	480.00	<b>480.0</b>	0	
Subsistence for field personnel	1152	<b>1152</b>	0	
Preparation, production and distribution of plant picture catalogue	500	<b>1043</b>	-543	Amounts saved from Raincoats, boots, precision instruments, Laptop computer and GPS were pulled into the production of plant picture catalogue. This allowed us to allocate more of the grant to community sensitization as advised by reviewers.
Community sensitization /outreach	220	<b>220</b>	0	Fuelling and maintenance of Hilux vehicle provided by APLORI + refreshment

				during meetings.
Communication of results	210	<b>200</b>	10	Internet data bundles and telecommunication airtime were purchased. Also, studio editing of videos recorded during meetings.
Consumables - Cardboards, printing papers, field notebooks, pencils, strings, ribbons	80	<b>70</b>	10	
Herbarium material for preparation of voucher specimen	190	<b>0</b>	190	Herbarium specimens were prepared for the APLORI herbarium; hence materials were used from the APLORI store.
Precision instruments/ clinometers Pc opti height meter (2) Silva 15TDCL Expedition Compass, 50m, 10m, 5m, 2m DBH tapes (2 each), Vernier callipers (2)	120	<b>0</b>	120	Instruments previously purchased by Abiem Iveren were available for use.
Rain boots for field personnel	40	<b>0</b>	40	Rain boots were provided for field personnel from the APLORI store.
Rain coats for field personnel	30	<b>0</b>	30	Rain coats were provided for field personnel from the APLORI store
Bank charges	0	<b>27.19</b>	-27.19	
<b>TOTAL</b>		<b>4988.16</b>		

### 9. Looking ahead, what do you feel are the important next steps?

Create more awareness on the need to preserve vegetation and at the same time determine the extent of crop raiding by wildlife, while finding solutions to accommodating wildlife on farmlands and other human residents. This is very important because the expanding human settlements entails that human landscapes are the fastest growing habitats available to wildlife.

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

Yes, the RSGF logo was used in the production of the cover page of the plant picture catalogue.

**11. Please provide a full list of all the members of your team and briefly what was their role in the project.**

**12. Any other comments?**