

## 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	
<b>Your name</b>	Dr Gaius Wilson
<b>Project title</b>	Estimating a critically endangered Sumatran elephant population and developing human-elephant coexistence strategies in Leuser Ecosystem.
<b>RSG reference</b>	17904-2
<b>Reporting period</b>	July 2017
<b>Amount of grant</b>	£5000
<b>Your email address</b>	<a href="mailto:gaiuswilsonin@gmail.com">gaiuswilsonin@gmail.com</a>
<b>Date of this report</b>	July 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
1. Estimate the elephant population size and demographics in Aceh				The elephant population in Aceh has been estimated to be around 500 individuals. Aceh is the last strong hold for a viable Sumatran elephant population that needs to be protected. This province also has the largest elephant population in Sumatra.
2. Establish nature and scale of human-elephant coexistence				A total of 300 interviews were conducted in two districts of Aceh province, Aceh Timur (East Aceh) and Aceh Utara (North Aceh). Initial data analysis indicates that human-elephant conflict is on the rise and is largely due to the rapid loss of forest/elephant habitat. Elephant sanctuaries set aside from human use need to be established and expanded so that conflict can be reduced.

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

We had initially planned for the population estimation surveys to be conducted along side our local collaborator, the Forum Konservasi Leuser (FKL) rangers, while on their regular patrols. However, after conducting initial surveys, it became clear that conducting these population estimation surveys would prevent the FKL rangers from conducting their regular patrol duties and covering their patrol areas, and hence it was decided that a separate team would be required to focus on the surveys. This was, however, limited by budget constraints and logistics. We then conducted these surveys based on direct sightings by the various ranger teams rather than indirect surveys (dung transects) to estimate the elephant population in Aceh. A second issue relating to the population estimation from dung counts arose when over 215 dung piles that were being monitored for the dung decay rate study were washed away in torrential rains within 8-12 weeks of being marked. We could not come up with conclusive dung decay rates. In the end, we did not need these dung decay rates as the direct method has helped us achieve our goals.

Given the size of the Leuser ecosystem, and the variation in human elephant conflict, site selection was largely based on advice from our local collaborators. Their interest was to expand their work to other areas, however, it wasn't until we started expanding to other areas beyond where their work was already conducted did we realise the severity of the human-elephant conflict and people's perceptions of elephants and other wild animals in the districts selected for the study. People's tolerance of what they considered 'elephant menace' was very low and that made it harder to interview people. While interviewing people, they had more questions about what we as researchers were going to be doing to mitigate the problem. Some of the villagers didn't want to be interviewed because they felt they had no support to protect their crops and livelihoods and were frustrated with the situation. In some cases, we were able to explain to the people that the interview data would help bring to light the damage brought about by elephants and other wildlife. In other cases, we had no choice but to continue with interviews in another village. We then moved from one district to another district in the province in order to continue with the project. The benefit of this is that we now have two sites to compare our data, which adds value to this study.

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

a. Our first objective was to better understand the elephant population demographics and structure in Aceh. Although the proposed methodology could not be followed (dung count method), information was gathered using other methods such as direct sightings (also proposed), which has given us a much better understanding of the population demography and distribution of the elephant population in Aceh.

b. Our second objective was to understand the nature and scale of the human-elephant conflict in Aceh. Through interviews conducted, some hotspots for conflict have now been identified and measures to mitigate the conflict will now be planned and tested.

c. Our third and most important outcome of the project has been identification of elephant herds that have been fit with GPS collars and their daily movement patterns are being closely monitored to help develop an early warning system and in time, establish and expand elephant and other wildlife sanctuaries.

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

Involvement of the local community was an important part of the project. People with local knowledge of the area were employed for short durations while conducting line transects and dung counts to estimate the elephant population.

We interviewed a total of 300 people from 25 different villages. In each of the villages, we employed one local person to guide us and take us to interview their community members. This provided some extra income to the guides and made interviewing his community members easier for us and acceptable to them.

Two students from Syiah Kuala University conducting their master's thesis were employed as research assistants for a short period. Both the students also come from the local community and experience some level of human-elephant conflict (HEC) in their villages too. They have thus had first hand experience of HEC and now are aware of HEC in other parts of Aceh. They have also been trained in data collection techniques on HEC and population estimation methods.

In addition to directly benefitting from the project funds for those people employed for the duration of the project, they also benefitted from knowledge sharing of conflict mitigation methods in other countries, many of which were new to them, for example, use of honey bees, chilli fences, growing crops that are not attractive to elephants, combination of elephant proof trenches and electric fences rather than their use independently.

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

This pilot project funded by the Rufford Small Grants has been the impetus for a habitat use and home range study of the Sumatran elephant in Aceh, northern Sumatra. The second stage of the project that involves radio-collaring three wild elephants from three separate herds has begun and their movements are being followed on a daily basis. This second phase of the project work will continue at least until the end of 2018.

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

The results of this work will be published in peer reviewed international journals. The results will also be shared with the concerned government authorities as formal reports. A detailed report will be shared with the Rufford Foundation within the next 3 months (October 2017) to be shared on the RSG website and other websites such as the local Indonesian University in Aceh.

#### **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 Rufford Foundation grant was used between June 2016 and March 2017. This pilot project has served perfectly to initiate the second stage of the project. By conducting this pilot project and interviewing people from various villages about the human-elephant conflict, those areas that are prone to a higher level of conflict were selected for the second stage of the project. The project will now continue for one more year and permits for the same have just been approved by the Ministry of Research, Technology and Higher Education (RISTEKDIKTI) in Jakarta. Dr Wilson will continue the second stage of the project – collaring and monitoring wild elephants to develop an early warning system to reduce conflict and study the home ranges and habitat use of Sumatran elephants in Aceh. Thus, while this project can be considered an independent project, it also forms the basis for a longer term project which will now continue for a second year.

**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
Research Assistant	2000	3000	1000	Two research assistants (RA's) (students) were hired instead of one RA for a short period of time from the local Indonesian University and were trained in data collection by the P.I and applicant – Dr. Gaius Wilson. We received additional funding to support a second student.
Field Assistant	1000	2000	1000	Each Research Assistant required a field assistant (FA) from the local community in order to maximise data collection. Additional funding was available for the second FA from other sources.
GPS/ Camera/ iPad mini	500	1000	500	Two GPS units were purchased instead of one. Better quality equipment was purchased to ensure they lasted throughout the duration of the project and hence there was an over-spend.
Travel from UK to Indonesia	750	1500	750	In addition to an international trip, some national trips to meet with the permitting authorities as required were made to present the progress of the project. Additional funds were available from external funding received.
Miscellaneous (tapes, ropes, field compass, stationery, data sheets, medical kit)	250	500	250	The funds provided for the basic minimum requirements to run the project successfully.
Fuel for travel within field site to sample transect and conduct questionnaire surveys	500	1000	500	Travel within the field site was under-budgeted as distances were further than expected. Direct access between the two sites was not possible and some villages where interviews were conducted were in remote areas that required hiring special 4WD vehicles.
	5000	9,000	4000	

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

Given the success we have had in conducting this pilot project and meeting our objectives in two districts of Aceh, it is important to identify all those areas that experience conflict and determine which areas need more support to help mitigate the problems so that both elephants and humans can co-exist peacefully. The next important steps are now to identify and establish protected areas for elephants to range freely with minimal human contact.

## **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?**

No material has been produced during the course of the project and hence the Rufford Foundation logo was not used. The data collected during the course of the project has however formed the basis of two master's student's theses and one manuscript is currently in preparation. For the manuscript, Rufford Foundation's support will be mentioned as the primary source of funding and will receive publicity from this manuscript that will be published in a peer-reviewed journal.

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

**Dr Gaius Wilson** – Principal Investigator and project leader conducting and overseeing the day to day activities in the field.

**Dr Abdullah Abdullah** – local collaborator in Indonesia and primary advisor to the two Master's students. Dr. Abdullah assisted Dr. Wilson with permits and then conducted training for the teams who assisted with data collection.

**Mr Rudi Putra** – local collaborator in Indonesia assisted with permits to conduct the work in Indonesia. He organised field teams to assist with data collection and training that was conducted by Dr. Abdullah and Dr. Wilson to around 30 field staff of Forum Konservasi Leuser (FKL).

**Drh Wahdi Azmi** – local collaborator who assisted with provincial permits and provided scientific advice on conducting the project at the two selected sites.

**Dr Amanda Korstjens** and **Prof Ross Hill** from Bournemouth University facilitated collaborations between the two universities so that the work could be conducted.

## **12. Any other comments?**

The Rufford Foundation funds have been instrumental in helping conduct a pilot study on elephants in Aceh. We are very grateful for this funding that has now led to setting up a longer-term project to help protect and conserve the Sumatran elephant.