



The Rufford Small Grants Foundation Final Report

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

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. 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. 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.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Utpal Smart
Project title	Inventory and Diversity Assessment of the Herpetofauna of Gunung Leuser National Park, Sumatra
RSG reference	15779-1
Reporting period	Final Report
Amount of grant	£4835
Your email address	usmart@uta.edu
Date of this report	27/07/16

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
Obtain relevant permits			*	Delayed by over a year.
Inventory and collect amphibians and reptiles			*	Objective expanded to include the herpetofauna of the whole of the Gunung Leuser Ecosystem.
Obtain ecological data for collected individuals			*	Ecological data collected includes but not restricted to: habitat type, elevation, temperature, weather, activity and call data.
Photograph and obtain DNA samples from collected individuals			*	All specimens were photographed alive in the setting of their natural habitats and after euthanasia from various aspects for taxonomic and identification purposes. DNA samples were distributed equally amongst our team and Indonesian counterparts.
Systematic cataloguing of collected specimens		*		The digital cataloguing of over 700 collected specimens is currently ongoing and is expected to be complete by the end of this year.
Train local students and stake holders			*	An undergraduate student from Uni Brawijaya and a MS student IPB participated in the fieldwork throughout most of the trip. Local stakeholders included personnel of the Kedah Rain Forest Lodge as well as
Dissemination of research results	*			We are currently in the process of curating our data and establishing the identity of specimens via genetic barcoding.

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

The permits for research in national parks and protected areas for foreign researchers were recently hiked up substantially and we thus had to reduce our number of days in these areas.

This year also saw less precipitation for May and June than the expected average and this worked against our objectives since herpetofauna are typically more active during the wet season. Hence we believe that even though we collected a substantial amount of herpetofauna, the real diversity still eludes us and will need more sampling repeated in different times of the year.

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

- A first comprehensive picture of the herpetofauna inhabiting one of the most diverse, unique and threatened ecosystems of the world.
- The discovery of at least 10 new species of reptiles and amphibians from one of the world's richest and yet least-known forest systems. This early estimate is based solely on gross morphological characters. Genetic barcoding data is expected to yield several additional new cryptic species.
- A unique repository of pictures, specimen and DNA for the herpetofauna of the Leuser Ecosystem that will serve as an essential basis for future studies on the taxonomy, ecology and conservation of amphibians and reptiles of the area.

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

During this expedition we were able to train two Indonesian students, two personnel (one senior scientist and one technician) from the Indonesian Institute of Science, and local guides/forest officers to collect, preserve and identify different species of herpetofauna.

5. Are there any plans to continue this work?

Yes, we would like to repeat the sampling in the core areas of the national parks that we were not allowed access to. We are hopeful that after our Indonesian colleagues present our detailed report to the Forest Department, we will be allowed access to these. This will also allow us to further interact with the stakeholders to highlight herpetofauna as important components of the ecosystem in their venture to conserve the Leuser habitat.

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

Apart from the technical reports and papers that will be provided to the Indonesian counterparts, we are in the process of preparing colour pamphlets consisting of a checklist of species of amphibians and reptiles found in the Leuser ecosystem, with colour photographs and basic ecological data. These pamphlets will be distributed to local stakeholders, NGOs and students via our colleagues at the Indonesian Institute of Science. We also have enough data to conceptualise a pocket field guide of the herpetofauna of the Leuser ecosystem, once we have finished curating our database, confidently identified species and run basic statistical diversity indices.

7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?

The RSG was used over a span of about 2 months. This was much shorter than the anticipated length of the project given the following circumstances:

- The almost two-fold increase in the national park entry fees for foreign researchers since the proposal was submitted.
- The expansion of the project to include the whole Leuser ecosystem as opposed to only the national park. This required us to travel more between different sites and also increase the number of team members, significantly increasing our expenditures.

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
International flight ticket (Utpal Smart)	250	250		
Extra airfreight cost for specimens and equipment	500	500		
Local flight ticket (Utpal Smart, 1 LIPI technician, 2 students)	600	600		
Inland transport (four wheel drive, motorbikes and boat)	600	600		
Lodging	1000	1000		
Boarding	400	400		
Guides and porters	700	700		

Consumable field equipment	500	500		
Miscellaneous	200	400	200	Exceeded original amount given the raise in the research permit fees.
TOTAL	4750 (out of the awarded 4835)	4950	200	

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

During our surveys across the ecosystem we visited several tracts of relatively pristine forests (both highland and lowland) with a rich and unique diversity of reptiles and amphibians that are currently not designated as protected areas. The next important step would be to communicate our results to the Indonesian authorities and propose that these areas be given some form of protection at the earliest.

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

The RSGF received publicity via mention in proposals provided to the Forest Department and all communications made with local participants during the preparatory phase of the project. The RSGF logo will appear in all subsequent presentations, publications and technical works that stem from this project.

11. Any other comments?

Our decision to stray from the original proposal, to restrict ourselves to the national park and sample the whole ecosystem instead, was based on the following urgent factors:

- Indonesian bureaucracy is getting more elaborate and acute by the day. We have heard from our local colleagues that obtaining foreign research permits is projected to get more difficult in the near future. We thus decided to make the most of this permitting cycle.
- Aceh has a history of being politically unstable and thus working in the province is always tricky and unpredictable. We wanted to take advantage of the relative stability of the last few years and survey as many areas as possible.
- Mining and palm oil companies are spreading through the province at an unprecedented rate. With the current levels of encroachment on protected areas, we are afraid that soon there might not be any forests left in Leuser ecosystem. Given that the Leuser National Park is already in the spotlight of conservationists, we decided to prioritise on areas of the ecosystem that did not have adequate protection measures. This was done with the hope of being



able to catalogue the diversity before it is lost and provide a stronger justification for the conservation of Leuser.

We would like to thank the RSGF for making this important work possible with their support and patience.