The Rufford Foundation
Final Report

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.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Name	Neil M. Furey
Project title	Capacity-building for conservation of cave-dwelling bats in Cambodia
RSG reference	16865-1
Reporting period	February 2015 to May 2016 (including approved extension)
Amount of grant	£4,995
Your email address	n.furey.ffi@gmail.com
Date of this report	25 May 2016

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
Rapid cave surveys		√		42 caves were surveyed out of the 65 originally planned, because as consultations with local communities and cavers familiar with the additional sites revealed that none of these supported bat colonies (like many of the 42 caves surveyed), it became clear that the projects remaining efforts were best devoted to its other activities (below).
Bat reproduction and public health			√	14 months of sampling were completed with co-funding support (compared to the original target of 6 months) providing the first datasets of their kind for western Cambodia.
Conservation capacity-building			√	Training of cave managers, students and government officials was completed as hoped. Four signboards were installed (compared to two originally planned) and 400 educational posters were distributed (compared to the 300 leaflets planned).
Reporting and media		√		Due to the large quantity of data gathered (see section 3 and 6 below), reports and papers are still in preparation.

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

Activities to develop and disseminate outreach materials (public education signboards and posters) were delayed by the repeated consultations needed on successive drafts to ensure local stakeholders (multiple communities and authorities) at the project sites were properly involved and happy with these. To address this, the project team requested a no-cost extension of 3 months. This

approved by Rufford and allowed completion of signboard installation and poster distribution.

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

1. Confirmation of six massive cave colonies of Asian wrinkle-lipped bats (*Chaerephon plicatus,* Molossidae) in western Cambodia. In possibly representing 78% (5.1 million bats) of the Cambodian species population and consuming economically significant quantities of major agricultural pests every year - these six colonies warrant recognition and protection as nationally important sites for Cambodian cave biodiversity and food security.

2. Strengthening of capacity for research and cave conservation through: a) training of cave managers, students and government officials via action-based learning; b) dissemination of protocols for sustainable guano harvesting; and c) installation of four signboards outside key bat colonies/ major tourist caves and distribution of 400 educational posters (see enclosed materials) across communities surrounding all major colonies discovered by the project.

3. Development of the first insights to cave biodiversity (42 caves) and bat reproductive phenology (14 months) in western Cambodia. While data analysis is ongoing, this suggests that *C. plicatus* give birth twice annually (in April and October), whereas other insectivorous bats give birth once each year (also in April). This is unfortunate as conservation threats and public health risks also appear to peak in April, cave-visitation being greatest then due to New-Year ceremonies and celebrations.

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

As anticipated, local communities were central to the projects field surveys (social and biological), development of public awareness materials (educational signboards and posters) and consultations to promote the use of best practice protocols for sustainable guano harvesting. These activities improved local awareness, knowledge and capacity for sustainable use and conservation of cave biodiversity. Further, as all of the large bat colonies documented by the project consume enormous quantities of major agricultural pests (providing a valuable plant fertiliser for local sale/use in the process) and two of these attract substantial numbers of tourists each year, the project also contributed to food security and economic sustainability of communities in the region.

5. Are there any plans to continue this work?

Yes. Based on the projects findings, follow-on funding was applied for a 2-year

project aimed at "Quantifying bat-mediated ecosystem services and associated folk knowledge systems in agricultural landscapes of western Cambodia" in partnership with the International Center for Tropical Agriculture. While this did not prove successful, sufficient funding has been obtained for 1-2 Cambodian students to undertake 1-year MSc theses on *C. plicatus* in 2017 and the project team and partners will continue to seek additional funding (the ultimate aim being to support site-based protection efforts and create monitoring programmes for all large colonies of the species in Cambodia).

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

Data from the project is being pooled with data on >50 caves in southern Cambodia (collected using same methods in 2014) to produce a national status review for Cambodian cave biodiversity. In identifying key sites for cave conservation nationally and establishing their ecological and economic importance for Cambodian society, the review will provide a powerful information source for future advocacy and other initiatives to protect the country's most important cave resources. On completion, this will be disseminated to decision-makers and made freely available to other interested parties online. Press-releases will also be sent to major media outlets in Cambodia.

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 received in mid-February 2015, and while the anticipated project period was March 2015 to February 2016 (12 months), its field activities actually ended in May 2016 due to delays in developing and disseminating outreach materials (see section 1 above). This was addressed by requesting a no-cost extension of three months which was approved by the RSGF and allowed completion of signboard installation and poster distribution.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures are in £ sterling (1.00 GBP = 1.54 USD).

***** Figures in this column are based proportionally on the amount actually received (4,943.25 GBP).

Item	Budgeted amount	Actual amount	Difference	Comments
Travel to/from project site	443.23	794.43	-351.20	Due to extra field surveys and higher than anticipated costs
Local travel	646.38	743.99	-97.62	Due to extra field surveys and higher than anticipated costs

Allowance for Gov. officials	517.10	399.18	117.93	Cost lower than anticipated and partially co-funded
Field guides/assistants	461.70	341.09	120.61	Cost lower than anticipated and partially co-funded
Accommodation	664.85	380.68	284.17	Cost lower than anticipated and partially co-funded
Daily field subsistence	1,034.20	799.73	234.47	Cost lower than anticipated and partially co-funded
Survey consumables	480.17	565.36	-85.19	Costs higher than anticipated
Medicla supplies	55.40	36.02	19.38	Cost lower than anticipated
Awareness materials	203.15	364.45	-161.30	X400 (A0) posters distributed instead of 300 leaflets
Cave interpretation	400.14	466.54	-66.31	X4 signboards installed at cave colonies (instead of 2)
Communications	36.94	41.54	-4.60	
Monthly bank charges	0	10.33	-10.33	Not anticipated in original budget
TOTAL	4,943.25	4,943.45		

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

- Evaluation of ecosystem services provided by cave bat colonies in Cambodia, particularly large colonies of *C. plicatus* and *E. spelaea* (to advocate for their official and wider recognition).
- Development of site-based protection efforts for nationally cave bat significant colonies (particularly the six colonies discovered by the RSG project).
- Creation of site-based population census/monitoring programmes to the same end.

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?

Yes. The RSFG logo was displayed on all awareness materials produced by the project team (four public awareness signboards and x400 educational posters, see enclosed materials) and the RSGF will receive further publicity through the projects forthcoming publications and press releases (see section 6 above).

11. Any other comments?

The activities reported here would not have been possible without the RSG and have also facilitated new partnerships with exciting prospects for future bat conservation efforts in Cambodia.