

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	
Your name	Iva Njunjić
Project title	Cave and karst fauna conservation in Lower Kinabatangan, Sabah, Malaysian Borneo
RSG reference	23999-2
Reporting period	2018
Amount of grant	£4910
Your email address	iva.enco@gmail.com
Date of this report	12.01.2019.

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
Locate caves				We explored seven limestone outcrops and located 25 caves.
Map caves				We explored 14 caves and mapped 13.
Raising environmental awareness about cave fauna and limestone ecosystems through lectures and workshops				We organised a workshop for KOPEL staff based in Batu Puteh to introduce the local community to our research on cave fauna and explain the importance of conservation of limestone and cave habitats. In collaboration with KOPEL we also organised a cave visit for local children.
Gather data on richness and endemism of cave snails and cave beetles				This is only partly achieved because I could not obtain a collecting permit in time for caves located in Supu hill.

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

Due to misunderstanding with KOPEL, I did not manage to arrange the collecting permit for caves located in Supu hill before the fieldwork. Since KOPEL is co-managing activities in Supu and the research would have been done in collaboration, we initially thought that I don't need to apply for a research permit. Just a month before our field work it turned out that I actually do need a permit and that this is a very complicated procedure that lasts several months and involves several parties. Unfortunately, I didn't have enough time to arrange the extensive paperwork before our fieldwork in February/March 2018. Nevertheless, although specimens could not be collected, the caves located in Supu were explored and surveyed, and cave maps were produced using laser scanning and shared with the local community at KOPEL, HUTAN, and researchers at Danau Girang Field Centre.

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

- We conducted the first biological sampling of caves in Lower Kinabatangan.
- 13 caves were surveyed and cave maps were produced.
- The project contributed to the following publication: Schilthuizen M., Perreau M., Njunjić I. 2018. A review of the Cholevinae (Coleoptera, Leiodidae) from

the island of Borneo. Zookeys, 777: 57-108.
<https://zookeys.pensoft.net/article/23212/>

- We organised workshops and lectures for the local community.
- The results of this project were shared with the local NGOs, researchers, and local community.
- I have presented the results of this project on on 24th International Conference on Subterranean Biology that took place from 19th to 24th August 2018 in Aveiro, Portugal. The poster and the abstract are available on my ResearchGate profile:
https://www.researchgate.net/publication/327624199_Cave_and_karst_fauna_conservation_in_Lower_Kinabatangan_Sabah_Malaysian_Borneo

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

We collaborated with the local community at KOPEL in Batu Puteh and HUTAN in Sukau. During lectures and workshops, but also during the field work, local people showed interest in caves, cave fauna and conservation of limestone habitats. They guided us to the caves and were willing to share information. With the help of KOPEL staff we organized a cave visit and a workshop for local children.

5. Are there any plans to continue this work?

At the moment, there are no plans to continue this project.

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

We shared the information about caves and cave fauna with local NGOs, our colleagues at University Malaysia Sabah and colleagues working on snails and leiodids, but also with interested public through social networks. The publication that partly resulted from this project has been published in an open-access journal. We are currently working on another publication where we will present the cave maps and organise the existing data on richness and endemism of cave beetles and microsnails, as well as information about main threats to subterranean ecosystems.

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 project got funds in December 2017. We have carried out the project within 12 months as expected, until December 2018.

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 travel health insurance	70	70	0	
Drinks and food during lectures and workshops	150	150	0	This also includes the equipment we bought for the local children for the cave visit. Each child got an "explorer kit" consisting of a helmet, notebook, pencil, vials, tweezers, and sweets.
Promotional material (posters and brochures)	200	200	0	
Projector Epson EB-X31	527	668	-141	We couldn't get the model we were initially planning to buy so we got another one which was a bit more expensive.
Static rope 150 m	301	300	+1	
Leica Disto X310	376	443	-67	This was more than we expected because we also had to buy an upgrade kit, pay the shipping costs, and the import duty.
Local transportation	89	90	-1	
Accommodation + food at homestay during the fieldwork for 3 persons	527	527	0	
3 airplane tickets to Kota Kinabalu (Malaysia)	2670	2470	+200	We booked the tickets several months in advance so they were a bit cheaper.

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

There is no comprehensive data about previous speleological or biospeleological research of the Lower Kinabatangan. Therefore, the data gathered during this project present the first step towards more comprehensive and focused research that should be continued in this area in the future and contribute to the conservation of these threatened karst habitats. Important next steps are:

- To continue cave explorations because there are probably more caves in this area that are not yet located.
- To continue the work on cave invertebrates in the Kinabatangan area.
- To keep working on the taxonomy and publishing the new taxa.
- To continue educational activities.

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, I used The Rufford Foundation logo on my poster presented at 24th International Conference on Subterranean Biology:
https://www.researchgate.net/publication/327624199_Cave_and_karst_fauna_conservation_in_Lower_Kinabatangan_Sabah_Malaysian_Borneo

The logo was also used on the posters and booklets that were distributed among the local community and on our presentations about the Project.

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

Dr. Menno Schilthuizen – help with organizing the fieldwork, giving lectures and workshops (in English and Malay), identification of the collected samples.

Aleksandar Ravas – cave exploration, survey and cave mapping.

12. Any other comments?

I would like to express my gratitude to the Rufford Foundation for supporting this research and to the local community at KOPEL and HUTAN for their hospitality and for sharing information about caves.