

## 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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

#### Grant Recipient Details

<b>Your name</b>	Pham Dinh Sac
<b>Project title</b>	Research and Conservation of Cave Arachnids in the Ha Long Bay, Vietnam - A World Natural Heritage Area.
<b>RSG reference</b>	9789-1
<b>Reporting period</b>	April 2011- April 2012
<b>Amount of grant</b>	£ 5820
<b>Your email address</b>	<a href="mailto:sacpd@iebr.ac.vn">sacpd@iebr.ac.vn</a>
<b>Date of this report</b>	April 2012

**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
To study on diversity including endemism of the cave arachnid fauna in the Ha Long Bay is seen through the new taxa for science			X	Most of the species found in the caves are new taxa. However, due to the limited specimen and the short time, we have not published yet them on the scientific journals.
The assessment of effects of tourist activities on the cave arachnid fauna			X	
To propose management solutions to conserve the cave biodiversity value			X	We have found the causes affecting the diversity of cave arachnids in the Ha Long Bay and have given management solutions to conserve them. However, in addition to the arachnids, it is needed to carry out further researches on other invertebrate groups such as Insecta, Crustacea, Mollusca, Myriapoda. Besides the introduction of conservation measures, it is necessary to carry out further education and training for people such as managers and staff of Ha Long Bay, local people, tourists, etc.
To establish "provisional atlas of cave Arachnid in the Halong Bay"			X	This is a very valuable material for managers, scientists, tourist guides, and visitors, etc. in the conservation education of cave biodiversity value. Additional surveys on cave other invertebrate groups are needed so that Atlas can be more sufficient. The printing for widely publication of this Atlas is also very important.

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

Because the caves are located on islands far from mainland, so the travel was very difficult and costly. The caves are from 25 to 40 km away from the mainland. We had to rent a small boat just to serve the survey work, so the travel cost for cave survey, which we have spent on, is much higher than expected. Even in the early days of research, in the first step of selecting the studied caves, we

have decided to buy cameras and GPS cheaper than expected to make up for the funding on research field (travelling).

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

- This is the first large survey on biodiversity of caves in Ha Long Bay. The results show that many species may be new species to the science, which are endemic for the region. The results also indicate special values of invertebrates in Ha Long Bay's caves, it is needed to explore them.
- From this project, Ha Long Bay Management Department can learn more about the value of cave biodiversity. Currently, many tourism activities are developed strongly in Halong Bay's caves. The project has shown the factors affecting biodiversity values in the area and given basic solutions in the management of biodiversity conservation
- An Atlas is to be built, which will be a particularly important material for the management of conservation of biodiversity values in Halong Bay.

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

We have collaborated with staff of Ha Long Bay Management Department to do the research on cave arachnids in the surveyed area. During the survey, they were aware of the value of cave biodiversity.

In addition, we had meetings with the leaders and staff of Ha Long Bay to discuss on some problems of management plan, their conservation issues and possible solutions. And we shared with them all the scientific and general information achieved during this project. In particular, both the managers and staff of the Ha Long Bay Management Department are pleased with the Atlas established by the Project. All agreed that this is a very valuable material which is extremely important to them. They also expect that the project will soon continue to investigate additional groups of invertebrates to complete the documents on cave biodiversity values in Halong Bay.

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

This research project has been just studied to cave Arachnida group in Ha Long Bay. Many other cave invertebrate groups have not been studied including Insecta, Crustacea, Mollusca and Myriapoda. Projects to be carried out are to know more about cave invertebrates of the area and determine the issues of biodiversity conservation of caves as well as to increase knowledge of their value. The idea survey to managers and staffs of the studied area shows that it is needed to carry out additional studies on other groups of cave invertebrates in the Ha Long Bay. We also need to collect additional specimens of Arachnids to publish the new taxa in science journals.

Besides, we want to carry out environmental education activities for the staff of the Ha Long Bay Management Department, local people, tourist guides about the cave biodiversity values and conservation management. It is for promoting the effectiveness of the project. We want to complete "an atlas of cave biodiversity value in the Halong Bay", including all the major groups of

cave invertebrates in the Ha Long Bay. This Atlas will be the printed documents serving the conservation of cave biodiversity values.

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

First of all, based on the collected specimens depositing at the Museum of the Institute of Ecology and Biological Resources, we will collaborate with other scientists worldwide to publish new taxa in science journals. The results of the project will be disseminated to the managers and staff of the Ha Long Bay Management Department. The results of the project also will be presented in national events, national and international congresses in the country. On the other hand, the scientific and educational documents (e.g., Atlas) created by us will be sent to organisations of biodiversity conservation in the country and libraries of Hanoi (where many people look for information) and Quang Ninh province (Ha Long Bay belonging to Quang Ninh province).

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

The project got funds on 14<sup>th</sup> April 2011. We have carried out the project within 12 months as expected, since April 2011 until April 2012.

#### 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
Equipment (GPS, Digital camera)	1150.00	750.18	399.82	We have decided to buy cameras and GPS cheaper than expected to make up for the funding on travelling.
Expendable supplies: (Ethanol, Field clothes and bags, flashlight, tubes to preserve specimens)	1230.00	1128.40	101.60	We found a cheaper offer
Travelling: -Travel to experimental sites (IEBR in Hanoi to Halong Bay and return). -Transportation by boat among experimental sites (caves) for sample collection	820.00	1346.20	526.20	The caves are located on islands too far from mainland, so the travel was very costly. We had to rent a small boat just to serve the survey work, so the travel cost for cave survey, which we have spent on, is much higher than expected
Manpower: PI and assistant for field work. Casual laborers (grouping and analyse specimen in lab)	1420.00	1420.00	0	
Other costs: House, Foods, drinks, ...in the time field work	1200.00	1146.12	53.88	We had to economize on the foods and drinks

<b>TOTAL</b>	<b>5820.00</b>	<b>5790.90</b>	<b>29.10</b>	Bank tax transferances
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Exchange rate: 1.0 (£) = 3300 (VND)

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

- To continue the surveys on other cave invertebrate groups in the Ha Long Bay.
- To keep works of taxonomy and publishing the new taxa.
- To complete “an atlas of cave biodiversity value in the Halong Bay”.
- To carry out environmental education activities for staffs of the Ha Long Bay Management Department, local people, and tourist guides about the value of cave biodiversity in the Ha Long Bay and the conservation management.

**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 logo was used at the “Provisional Atlas of Cave Arachnid Biodiversity Value in the Ha Long Bay, Vietnam”, and a meeting in the Ha Long Bay.