

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	Jia Jet Ong
Project title	Ecology and conservation of <i>Ansonia latidisca</i> , the Bornean rainbow toad, in Gunung Penrissen, western Sarawak.
RSG reference	10637-1
Reporting period	January – October 2012
Amount of grant	£5500
Your email address	riojjj@msn.com
Date of this report	20-10-2012

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
Advance the understanding of biology and ecology of <i>Ansonia latidisca</i>			√	We conducted field work bi-monthly since January 2012, and improved our understanding on <i>Ansonia latidisca</i> , from the published literature of the original description by Robert Inger (1966), whose only field information was that it was a montane species. Data such as microhabitat utilisation, diet, behaviour and bioacoustics of the species were gathered in this period of time.
The range of microhabitat			√	The habitat of this bufonid is confined to the lower montane, mossy forest on the upper part of Gunung Penrissen, based on my survey. Individuals are entirely arboreal, except two juveniles that were found near permanent streams.
Reproduction mode and breeding strategy	√			We did not discover tadpoles of <i>Ansonia latidisca</i> , but two juvenile, presumably freshly transformed individuals of the species (snout-vent length of 14-16 mm) were found at the edge of two permanent streams. We can speculate that this species spawns in streams and have torrent-adapted tadpoles. I will conduct further field work until the end of 2012, and hope to collect data on tadpoles.
Stomach content			√	We flushed 35 stomachs and recovered 412 prey items. Twelve categories of prey items were found in the stomach samples, consisting of Hymenoptera (ants, 85.7%), and Coleoptera (beetles, 40.0%) of several species. High frequency of occurrence ants in their diet suggests that <i>Ansonia latidisca</i> belongs to the "ant specialists" guild, as are most bufonids that are ant-eaters. Moss (bryophyte) (20%) was occasionally found, and this might be due to incidental ingestion. The foraging tactics employed by this toad suggests it is an active forager, taking numerous

				small preys, rather than relatively fewer large preys.
Parasites in/on the species		√		No ectoparasite was found in the species. We did not test the blood for endoparasite, and no parasites were observed in the stomach contents. All toads appeared healthy at the time of capture.
Bio-acoustic			√	The first ever call of <i>Ansonia latidisca</i> from the wild was successfully recorded in February. During the period from September to October, we managed to record two additional call samples. The rocky terrain and excellent camouflage capability of the toad make recording difficult, and I suspect the prolonged drought after February could be the factor explaining why the species stopped calling.

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

Unpredictable weather

During the early of the year, rain volume was high. Since heavy rain could negatively affect our sighting chances of amphibians, we had to wait for the rains to stop but most of the time we would get our entire body wet even with a rain cover on us. Rain water was good for frog reproduction, so none of us complained.

Hiring field assistants

It was an arduous task at the beginning of the project as I am not a local Sarawakian. However, my colleagues from the Institute that I am enrolled in, and sometimes overseas herpetologist came to assist. I trained some locals as research assistants in the field, but teaching them on how and where to search for frogs took them some time to master.

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

1. Publicity on *Ansonia latidisca*

I gave a talk on *Ansonia latidisca* and the conservation work that I am doing at Gunung Penrissen at the inaugural Bornean Frog Race in Permai Rainforest Resort on the 28 April 2012, in conjunction to 4th annual Save the Frogs Day. It was attended by 40 frog fans around the region, and was reported by the media.

My field work was also attended by international colleagues from the United Kingdom and Russia. Jim Foster, the Conservation Director at Amphibian and Reptile Conservation based in Surrey, England and Dr. Vladimir Shakhparonov, a researcher from the Department of Vertebrate Zoology, Moscow State University and his wife, Elena Panova, joined me to Penrissen to observe my work. According to Mr. Foster, news of the rediscovery of *Ansonia latidisca* received good public response

in the United Kingdom and we were fortunate to spot them in the wild during his stay. We discussed different methodologies that can be applied to such species in the field, to gather data on their natural history.

Dr. Shakhparonov shared his expertise on the orientation of frogs and toads, as relevant to *Ansonia latidisca*, such as using a bobbin thread. In one night, we discovered that a female *Ansonia latidisca* moved over 13 m. This further justifies that *Ansonia latidisca* is an active forager, although ant specialists have been considered sit-and-wait predators in the past.

2. Increase the profile of scientific understanding of *Ansonia latidisca*- a poorly known species

To date, we have good data on *Ansonia latidisca* in terms of what they eat and where they are distributed along the jungle trails of the Batu Panggah station. We also have three good call recordings. I will present quantitative as well as qualitative descriptions of the vocalisation of this Bornean endemic, as oscillograms and spectrograms.

After completion of my MSc thesis, I hope to publish my results, to share this newly acquired knowledge in scholarly journals as well as in popular literature.

3. Conservation of *Ansonia latidisca*

Results of this study can provide vital information for the conservation of *Ansonia latidisca*. In the IUCN Red List of Threatened Species, this species is listed as Endangered due to habitat loss and threats from forest fragmentation. Logging has ceased in the upper part of Penrissen range but the current threat to the *Ansonia latidisca* population is due to land conversion for recreational use.

With only one population of *Ansonia latidisca* known from this study, it is hope that important sites for the known localities of the species can be effectively preserved. This study has shown that this arboreal species survives only in the unprotected primary forest of the Penrissen range that is vulnerable to logging.

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

Since the beginning of the project, we hired locals (staff from the private resort and villagers from the nearby Padawan district) to work with us. I also trained them as my assistants to help search for frogs.

During the Bornean Frog Race 2012, we shared our work with the community who joined the event. I gave a talk entitled "Research and Conservation of *Ansonia latidisca*, the Bornean Rainbow Toad at Mount Penrissen" and we received a good public response. After my talk, I would sometimes joined by teams of local naturalists from the Malaysian Nature Society in the jungles of Penrissen, just to photograph *Ansonia latidisca* in the wild and after a few attempts, one of them managed to photograph it and shared it on Facebook.

5. Are there any plans to continue this work?

My work in the field will continue until the end of this year (2012), and a PhD student from our institute, Mr. Samuel Shonleben, will continue to work on the area on the effect of forest fragmentation on the herpetofaunal community in the Penrissen range. He will cover a wider range of topics and *Ansonia latidisca* will be studied in a larger area.

The avifauna around Borneo Highlands Resort will continue to be studied by our Institute. For many years to come, and the Penrisen range will be a hotspot for scientists to continue to uncover its biodiversity.

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

After completion of my Master's thesis, I will be working on writing papers to get them published in peer-reviewed journals. I am planning to attend an international conference next year: entitled: "Wallace 2013. 2nd International Conference on Alfred Russel Wallace- His Predecessors and Successors. Naturalists, Explorers and Field Scientists in South-East Asia and Australasia" to disseminate my results, using the remaining fund balance.

A conversation with Mr. Benard Tiang, the assistant marketing manager from Borneo Highlands Resort, revealed the distribution data of anuran species found by me, will be plotted in their Resort's pamphlet. *Ansonia latidisca*, dubbed as the 'World's Top 10 Most Wanted Lost Frogs', can help attract tourists to the Resort and if properly managed, we help to instil awareness in the visiting communities.

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

RSG fund was given to me in October 2011, but I was unable to conduct work immediately due to my commitment to attend my bachelor degree (Hons) convocation. Thus, funding from RSG was used since January 2012 until now (October 2012). Since I enrolled with a local university, I managed to cut costs on some budgeted equipment and transport and the remaining budget will be able to fund my research until the end of the 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
Per diem for project leader	1700	1416.67	283.33	Remaining budgeted amount will be used until the end of the year 2012.
Hiring a porter	450	326.53	123.47	Remaining budgeted amount will be used until the end of the year 2012.
Per diem for field assistants	1600	1285.71	314.29	Remaining budgeted amount will be used until the end of the year 2012.
Travelling expenses and subsistence	700	587.76	112.24	Remaining budgeted amount will be used until the end of the year 2012.
Research materials and supplies	500	112.57	387.43	Extra budget was used to fund my research equipment, since some of the other research materials listed could be borrowed from the university.
Research equipment	550	883.88	-333.88	We bought a Garmin GPS 62s, 3 Fenix Flashlights and a few unbranded flashlights (as backup) for field usage. Halfway

				through the year, my old Asus laptop broke down and I had to replace it with another Asus laptop (A43S) for research and data analysis purpose. A Fenix flashlight (LD40) also broke down and I replaced it in emergency with a cheaper flashlight (LD22) for my research assistants.
Registration and fees for the Wallace conference	0	150	-150	To participate in the Wallace conference (2013) in Sarawak to disseminate further information about <i>Ansonia latidisca</i> , using the remaining fund balance.
Miscellaneous	0	4.08	-4.08	This included postage fee to send the broken Felix flashlight
TOTAL	5500	4767.20	732.80	(1 GBP = RM 4.9)

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

The methods used to study *Ansonia latidisca* can be used for amphibian conservation throughout Sarawak. It is especially important to highlight species endangerment due to rapid development and deforestation state-wide and access to the impact thereafter. Areas of high animal biodiversity such as the Penrissen range should be conserved and identified as a biological hotspot to attract people from around the world. The management of the Resort (a large parcel of the land is privately owned) should localise suitable habitat patches for amphibian sighting, not only for recreation purpose but also to introduce people to get closer to nature. Primary management goals from the Resort should include: 1) gazettement the remaining primary forest of the Penrissen range as a state park or a national park, to protect biological diversity, and 2) attracting more tourists and scientist all over to study and particularly enjoy the nature. Since Penrissen Mountain is not a protected area, given a protection over the macrohabitat will ensure the survival of *Ansonia latidisca* for many decades to come.

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?

During the Bornean Frog Race in Sarawak, the RSGF logo were shown in each my presentation slide and I acknowledged RSGF for supporting my project. My success in obtaining fund from RSGF was also shared among my colleagues and appeared in our group website (see <http://theherpetofaunalbiologygroup.weebly.com/index.html>).