

## The Rufford Foundation

### Final Report

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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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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#### Grant Recipient Details

<b>Your name</b>	Theng Tze Yin Meryl
<b>Project title</b>	Status of Threatened Small Carnivoran Species of the Wetlands in an Unprotected Forest Reserve in Johor, Malaysia
<b>RSG reference</b>	24012-1
<b>Reporting period</b>	1 year
<b>Amount of grant</b>	£5000
<b>Your email address</b>	meryltheng@gmail.com
<b>Date of this report</b>	September 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
To determine small carnivoran diversity in the study area.				A total of 10 species of small carnivorans were detected from the camera traps: <i>Aonyx cinerea</i> , <i>Cynogale bennettii</i> , <i>Herpestes brachyurus</i> , <i>Prionailurus planiceps</i> , <b><i>Arctictis binturong</i></b> , <b><i>Hemigalus derbyanus</i></b> , <i>Martes flavigula</i> , <i>Prionailurus bengalensis</i> , <i>Prionodon linsang</i> and <i>Viverra zibetha</i> . The first four were the target species of this project. Species highlighted in bold are new records to the area.
To examine activity pattern and other interesting behavioural patterns of the species' captured in the study area.				Though detections of the three out of four target wetland-associated small carnivores were low (1-7), there is some indication of temporal partitioning of activity between the species. The short-tailed mongoose was strictly diurnal (25 detections), while the otter civet was only captured between 8pm and 4am at night, and the lone capture of the flat-headed cat was at night. The small-clawed otter was detected early at 5am up to 11am. The foraging behaviour of the elusive otter civet was captured on two occasions and will be written up.
To find out the distribution of the small carnivoran species in the study area.				The most widespread species was the short-tailed mongoose, which was detected in nine locations. This was followed by the otter civet, which was captured in three lowland locations in the pilot study, and only in two in the full study. The species appear sympatric as they were captured in either the same location or in the adjacent location.
To find out how similar or different small carnivoran				Unfortunately, a clear comparison between wetland habitat types

<p>diversity/assemblage is in wetland habitats.</p>			<p>(freshwater swamp, stream, ephemeral pool) could not be made due to the low detection rates of the target species. However, qualitative information on their habitat use could be made. All four species were not detected exclusively in any habitat type. The short-tailed mongoose which were detected most often (12) were found in both dry and wet areas during the period of the camera trapping. The other three species were only detected if the area was wet and were found in both sandy stream type habitats and swamp habitats.</p>
<p>Awareness raising and capacity building</p>			<p>A 2-day nature guiding workshop was organised with the two local nature guides that assisted me in my field work (Shahrool Anuar bin Rohani &amp; Asiyahtul Husna). I, together with two veteran nature guides from Singapore facilitated the workshop. It included sharing information on the flora and fauna of Panti Forest Reserve, and hands-on sessions that provided opportunities for the local participants to guide and share their knowledge with others. A total of 30 participants took part, which was made up of local nature guides, students from UTHM, and others who were interested in taking up nature guiding as a profession. Separately, I have trained both guides in using the GPS unit that they now own.</p>

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

The proposed design to place the cameras following the drainage system of the study was altered due to the lack of a detailed drainage map of the area. Instead, paired cameras were deployed in 22 locations, in the nearest waterway to the centre of a 2 km<sup>2</sup> grid design. We could not trap during the wet season (November to January) as the drastic fluctuations in water levels in early November caused two

cameras to fully submerge in water. The trap season lasted from February to June 2019, with locations alternated to cover the total number of locations. Each camera was targeted to record at least 40 working days, though a handful failed to function the full duration.

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

The highlight was the high richness of mammal species that continues to persist in this degraded and disturbed forest reserve. There were new records of mammal species other than the two small carnivores mentioned earlier (leopard, clouded leopard, golden cat, long-tailed porcupine).

Though captures of the two endangered target species (otter civet and flat-headed cat) were sparse, these records are valuable additions to the few that have been accumulated so far.

Moreover, we gathered some new qualitative information about the foraging behaviour and ranging behaviour of the otter civet. This will be written up and published, along with notes about the other three target species.

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

Three local nature guides participated in my field surveys and received additional income as assistants. We learnt about nature and conservation from each other and have future plans to continue working together in the same area.

The nature guiding workshop provided us the opportunity to share the floral and faunal diversity in the study area. Most local participants were unaware of the diversity still present in the area. Moreover, they increased their repertoire of nature stories to tell from the facilitators and from each other. Lastly, the workshop was also an opportunity for the guides to network amongst themselves and with the Singaporean facilitators, whom have contacts that may engage their services in future.

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

We plan to take this work in a broader direction to investigate the importance of maintaining habitat connectivity in preserving the mammal diversity that has been captured in this project. This would involve a survey on a larger scale that will include other fragmented patches in the state of Johor. We will use the cameras that were funded by this project and hope to apply for a 2<sup>nd</sup> Rufford Small Grant to further support this work.

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

The results of this study will be written up and published. In addition, the camera images from this study will be shared (with the grantor's permission) with a local NGO

who are looking to publish a coffee table book to highlight the importance of this site.

**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 grant was used from September 2018 to July 2019. There was a delay in the field schedule up till June 2019 which was supposed to end in March 2019. This was a result of the difficulties trapping during the wet season detailed in question 2. The outreach activities took place in July 2019.

**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
GPS Unit	200		-200	The money for this additional GPS unit was used to pay local guides instead. The GPS already purchased was given to my lead guide instead.
Camera traps and accessories	4800	4504	-296	Less camera traps and accessories were purchased to divert funds into field/RA and outreach costs.
Local field assistance		200	+200	Following the board's advice to increase this budget portion.
Bank charges		6	+6	
Outreach (nature guiding course)		290	+290	Following the board's advice to include this aspect into the project
<b>TOTAL</b>	<b>5000</b>	<b>5000</b>		<b>Exchange rate (12 Sep 2018)</b> <b>1 GBP = 1.76832 SGD</b> <b>(Singapore dollars)</b>

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

The highlight for this project is the high richness of mammal species that continues to persist in this degraded and disturbed forest reserve. This is likely due to its continued connection with larger a larger forest reserve and protected area (Endau-Rompin) in the north. An important next step would be to investigate the importance of

preserving habitat connectivity with other adjacent forest reserves and how it affects mammal richness and relative abundance.

**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, the foundation's logo was displayed in the poster and presentations created for the nature guiding course we held. It was also acknowledge in two of the new records published in Southeast Asian Vertebrate Records, and will be in any future publications

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

**Norhayati Ahmad** – She was my local university collaborator who guided me through the process of doing research in Malaysia. She also introduced me to local guides who became my field assistants.

**Shahrool Anuar bin Rohani** – He was my main guide in the field, assisting me in setting up camera traps and looking out for my safety.

**Asiyahtul Husna** – She also assisted in my field work by keeping tabs on the logistics and as our safety contact outside of the forest.

**Vilma D'Rozario, Andrew Tay** – My two main volunteers assisted me in the field. They are also very experienced nature guides who facilitated the outreach event.

**Kripa Dubey, Carmen Soon** – Other volunteers who assisted me in the field.

**Ian Chew** – He assisted me in the field and the sorting of camera trap images.

**12. Any other comments?**

We sincerely thank the foundation for supporting this work. Such a scale would not have been possible without their support.