

## 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**

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Grant Recipient Details	
<b>Your name</b>	Wanlop Chutipong
<b>Project title</b>	Distribution, abundance and conservation of small mammalian carnivores in a threatened dry forest landscape of Thailand
<b>RSG reference</b>	10504-1
<b>Reporting period</b>	Oct 2011 – September 2012
<b>Amount of grant</b>	£6,000
<b>Your email address</b>	wanlop.chutipong2012@gmail.com
<b>Date of this report</b>	September 2013

**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
Estimate distribution and abundance of small carnivore species			X	Density of large Indian civets – a species with natural unique mark was estimated for two study sites. Distribution and abundance of six small carnivores were modelled with habitat variables including food (rodent abundance and density of fruiting stems), physical variables (e.g. habitat type, elevation) and interactions with larger carnivores (tiger, leopard, dhole and clouded leopard).
Produce a map of the movement patterns of selected animals within this landscape before and after burns		X		Home ranges of five animals from two small carnivore species (binturong and masked palm civet) were estimated based on radio telemetry data within two study sites where part of the area was annually partially burnt.
Quantify major components of the food supply for these small carnivores			X	Rodent (murids) abundances were estimated in burnt and unburned areas. Density of fruiting stems (trees and woody climber) were also estimated and used in modelling abundance of six species.
Produce fire management guidelines for the forest managers		X		We didn't detect the effect of prescribed burning practised annually by park authorities on biomass of rodents and abundance and distribution of small carnivores. Therefore, current management practice on fire management may be maintained for the purpose of habitat management (minimising fuel load, especially from grass).
Provide training for two young Thai field assistants in wildlife research techniques			X	Two young Thai field assistants have learnt through extensive fieldwork how to ask questions in relation to animal ecology and conduct ecological research. Now both of them enrolled to a graduate programme under the Conservation Ecology Program at King Mongkut's University of Technology Thonburi, Thailand.

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

None.

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

- (1) Based on camera trapping, I estimated density and distribution of some small carnivores. Density of large Indian civets was estimated for two study sites based on natural unique mark. This estimation is the first density estimation of this widely distributed species and it can serve as a baseline population estimate for long term monitoring. Distribution and abundance of six small carnivores were modelled with habitat variables including food (rodent abundance and density of fruiting stems), physical variables (e.g. habitat type, elevation) and interactions with larger carnivores (tiger, leopard, dhole and clouded leopard). Abundance of all species were positively correlated with food abundance (rodent and fruit) and some habitat features (percent canopy cover and ground cover) which may be related to some unmeasured food e.g. insects, amphibians and reptiles. However, in term of species interactions we did not detect spatial avoidance of smaller carnivores to those large carnivores as we expected based on evidence of predation elsewhere. Probably the scale of coexistence at both temporal and spatial scales between the large and small carnivores at least in this study is very fine.
- (2) We didn't detect the effect of prescribed burning practised annually by park authorities on biomass of rodents and abundance and distribution of small carnivores. Therefore, current management practice on fire management may be maintained for the purpose of habitat management (minimising fuel load, especially from grass).
- (3) Two young Thai field assistants have learnt through extensive fieldwork how to ask questions in relation to animal ecology and conduct ecological research. Now both of them enrolled to a graduate program under the Conservation Ecology Program at King Mongkut's University of Technology Thonburi, Thailand. They will fulfil their study requirement within 3 years and will work among wildlife ecologists to address ecology and conservation issues.

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

As the project focused mainly on the responses of small carnivores to physical and biological factors and management practice (prescribed burning) but not specific to the involvement of local communities on management issue, thus, the project can only involve four local Karen in its fieldwork activities including setting up camera traps, trapping small carnivores and handling trapped animals, trapping rodents, assessing abundance of fruit across different forest types and radio tracking radio-tagged animals. Although experiences and enjoyment these local Karen received from and shared with working with other team members during the project period may not be applicable to their everyday life in their villages, I believe that there attitudes towards small carnivores which some of them form part of their occasional menu (e.g., palm civets) may be changed positively.

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

My main interest is and always in small mammalian carnivores which is the group of (many) less known animals due mainly to their elusive behaviour and hard to be detected by conventional survey method e.g. line transect or even camera trapping. After graduating I plan to continue my work on small carnivores, in particular on otters, living outside protected areas. This is because, based on my experience, animals living outside protected areas are facing immediate and serious threats than those residing within protected areas (at least those under my study from this project). For, example, two species of otters, small-clawed otter and smooth-coated otter, occur in the Inner Gulf of Thailand where most (>90%) of the area occupied by human (settlements, agricultural land, infrastructure, etc.). Based on preliminary surveys (interviews with local inhabitants and track and sign surveys) these two species of otters still occur in this area. Moreover, some conflicts were identified which in some cases led to retribution. Therefore, it is necessary that the population of otters in this highly human dominated landscape need to be studied and any issues found from the study that may lead to population extermination must be addressed accordingly. This is my future plan to continue the work on small mammalian carnivore research and conservation so far.

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

First, report will be submitted to the authority (Department of National Park, Wildlife and Plant Conservation) and follow up meeting at site level will be held with materials including factsheet and poster summarising the entire project work regarding small mammalian carnivore ecology (all in Thai language, in preparation) will be distributed at both levels.

Secondly, scientific articles (one is submitted and three are in preparation) will be published based on findings from the study conducted during the three-year period. Camera trap data from this project will be used along with camera trap data compiled across Thailand to assess status and distribution of small mammalian carnivores which has never been assessed before. This manuscript is in preparation and will be submitted to Small Carnivore Conservation (the journal of the IUCN Small Carnivore Specialist Group). The findings from this study will be used in part by IUCN expert team to assess status of small mammalian carnivores during their regular meeting.

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

The budget was spent during the period of the project (October 2011 – September 2012) and it was spent according to the plan (see below).

**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
camera traps	3,900	4,184.1	-284.1	
shipping and import duties	780	-	780	This amount was relocated to cover battery and transportation costs
battery for camera traps	640	1,255.23	-615.23	

transportation	680	836.82	-156.82	
<b>TOTAL</b>	6,000		-276.15	Surplus expense was covered by matching fund. (Exchange rate at 3 October 2011, 1GBP: 47.8 Thai Baht)

Camera traps bought during this project are in good shape and still in well performance. Now they are used by bear ecologist (Dr Dusit Ngoprasert, my colleague from the same institute) to estimate density of Asiatic black bear and Malayan sun bear in other protected areas.

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

As partially described in (6) the important next step is the assessment of small carnivore status and distribution across Thailand based on camera trap data compiled over the period of >10 years and across Thailand (19 protected areas). This is now under preparation mainly by me and the other two colleagues from the same institute. This collaboration spans over both academic institutions and NGOs. This vital information of all small carnivores known to occur and being recorded across Thailand will be of conservation important at least for those interested in this group of diverse animals (Small Carnivore Specialist Group - IUCN).

**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?**

I haven't used the RSGF logo yet in any material produced in relation to this project. RSGF has not received any publicity during the course of my work.

**11. Any other comments?**

This is my first experience to be a project leader, thus, all of uncertainties and delayed is my solely responsibility. The grant from RSG was proved to be very crucial to me, although it covered partial of my work, without it the achievement of my project's goals can be very difficult to achieve. I hope the RSGF continues to be available for small scale research and conservation projects worldwide as currently is. Your support will be kindly recognised and acknowledged throughout any publicity in relation to this work.

## Annex



Camera trapping photographs of 6 Large Indian Civets, showing characters used in identifying individuals. Stripe patterns by side of neck vary among individuals and, therefore, can be distinguishable provided animals were photographed in perpendicular to camera. Also, patterns of ring and the beginning of tail can be used to differentiate individual Large Indian civets.



Left: Two field assistants (Karen ethnic) were taking measurement of live-trapped rodent and marked individual in order to estimate abundance. Middle: Two young field assistants who are now taking their graduate degree at the university were setting up camera trap in an evergreen forest.

Right: Many of the camera trap maintenance trips were made in collaboration with park rangers when they were going out on their regular patrol.