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. 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	Ma. Renee P. Lorica
Project title	Spatial ecology and abundance estimates of the Visayan leopard cat *Prionailurus bengalensis rabori* (Kerr 1792) in the sugarcane farms of Negros Occidental
RSG reference	7886-1
Reporting period	1 June 2010- 30 June 2011
Amount of grant	£6,000
Your email address	loric001@umn.edu
Date of this report	23 September 2011

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
Determine presence or absence of leopard cats in the cane fields of Brgy. Araal, La Carlota, Negros Occidental.				Although we were unable to capture adult's leopard cats, we were able to confirm the presence of leopard cats via kitten rescues, scats, tracks and sightings.
Determine the social and spatial organisation as well as activity patterns in sugarcane plantations				This objective can only be realised by tracking a collared animal but since we were unable to catch any, this was not realised.
Determine habitat use, particularly the remnant riparian and brush/scrub habitats within these extensive fields				Based on the kitten rescues, scats collected, and tracks found in the transects laid down in various habitat types in the area, we will be able to infer habitat use to some degree. There is however, bias against areas that are very disturbed, or which the substrate does not allow for temporary preservation of tracks. Radio telemetry will have helped eliminate t his bias.
Determine their movements in response to the (stochastic) harvesting of sugar cane for the purpose of identifying potential areas where leopard cats survive during fallow periods between the cutting and replanting/ regrowth of sugar cane.				Because we were unable to capture adult leopard cats and collar them, we were unable to achieve this objective. An inference from signs of presence alone without actually tracking the animal will be weak and biased for the areas where we were able to collect scats; and this may not reflect the actual movements of the animal in the wild.
Estimate site occupancy for the different habitat				Occupancy of the different habitat types in the area will be estimated using the signs of presence mentioned

types in the area.				previously.
Compare and contrast leopard cat ecology in sugarcane farms with those of leopard cats inhabiting oil palm plantations and forest.				This objective was geared towards comparing home ranges, movements, and activity patterns of leopard cats from other parts of its range but since we were unable to collar a single animal, these comparisons cannot be done due to the different methodology employed by this project.
Test and improve on existing methods of estimating population densities for small felids.				We aimed for collecting not only scat samples but blood from captured animals as well as hair from the hair snares, using DNA to estimate population densities. Unfortunately, we were unable to capture an animal; and the hair snares were unable to attract cats. The bait that would've induced them to rub against the snares did not stay on the pads long enough to attract a cat; or rains will cause the bait to run off the pads. Hence, we only had the scat samples to work with; most of which were too degraded to have any useful DNA material. Some of which only registered prey DNA.
Formulate recommendations as to the management of remnant patches of alternative cover within sugarcane farms for the conservation, not only of leopard cats, but other species inhabiting this landscape.				With the analysis of the data from the signs of presence and using occupancy to estimate habitat use, we will be able to formulate recommendations to the private farm owner as to the management of remnant [non-agricultural] habitat patches while encouraging non-hunting of leopard cats in the area, especially during harvest season. We say that this was only partially achieved because telemetry data would've made the scientific data stronger, as well as provided us with information as to which other cane farms these cats go to, which would've enabled us to include other farms in our recommendation.

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

It was expected that it will take us a while to catch leopard cats, but it was wholly unexpected that we will be unable to catch any. We tried all possible bait combinations and changed live traps three times. We also employed foot snares in conjunction with the last batch of live traps. We have also tried all kinds of bait and attractants; and different ways of setting up a live trap (camouflaged versus un-camouflaged; different camouflages). As for trap placement, we combined the advice given by the local hunters, previous sightings, previous kitten rescues, what we know and what other researchers know of leopard cat behaviour, and sign of presence to determine where to place the traps; where to transfer them, and when to transfer. In the end, all of it was to no avail.

There were also some security issues that arose during the conduct of fieldwork. It was not uncommon that drunken fights broke out in the village where we live in but most of the people have high regard for the farm owner and no harm came to us. However, in the last month of the project, news spread around of a group kidnapping young people and harvesting their internal organs. It was proven to be true by the local and provincial police, and at first, we thought of pulling out earlier, but after some thought, we decided to hire people who will accompany us during transect walks.

Transect walks are being conducted separately by myself and my research assistant, to maintain independence, being one of the assumptions of occupancy modelling. Oftentimes, our heads would be bent down low, scouring the ground for tracks and/or scats between rows of quiet cane fields. Since we do not pay attention to anything else, this makes us vulnerable. We hired two local men who accompanied each of us during transect walks, and we were able to conduct the rest of the fieldwork in safety.

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

I think the most important outcome of this project is the awareness it brought to the community living in close proximity to the animal. Prior to the project, the people in the area were already aware of the existence of leopard cats. Several leopard cats kittens, or litters have come from this farm since 1997. These kittens were brought to a rescue centre in the city, mostly through the owner's directive, or under some reward programme by the owner in the past (i.e. chicken-for-kitten). The people who work in the farm, and the adjacent ones are poor; any source of protein is welcome, and any additional source of income, even more so. During harvest, adult leopard cats are captured and killed to be eaten, while kittens are sold as pets. I believe that with all the kitten 'donations' (i.e. people willingly giving captured kittens to us to be taken to a rescue centre in the city, without compensation), the people have come to a realisation that indeed, these animals need their help to survive, and that leopard cats living within these cane fields, together with other wild carnivores, help with their livelihood. Don't conservation actions start with awareness?

The second important outcome of the project is what the people directly involved in the research have learned while on field. This is the first project I managed on my own and simply preparing the logistics is a big learning experience for me. Managing people is the other big thing I learned from it, as I've never done it before. It's not easy maintaining some level of friendship with the people in the local community but at the same time, maintain some sort of professional distance. Where does one draw the line?

I also learned to be very patient and creative in dealing with problems arising in the field; that there are those we can solve, but there are also those that are simply field conditions and we just have to adapt to them.

My research assistant, fresh from obtaining his undergraduate degree, shared that he learned a lot of things while working on the project. For one, he learned the basic information about leopard cats, a species he's never worked with before. As the project progresses, he learned more new technical knowledge off and on field, not to mention earned new friends, learned how to deal with people in the community and became more responsible as a person.

Lastly, the important outcome of this project is the information we will generate when we have analysed the scat samples for diet, and the presence-absence data. For example, from our preliminary analysis of diet, introduced rodent pests comprise about 96% of the diet of leopard cats in the cane fields. This tells us that leopard cats exert pressure on the pest population, and together with other wild carnivores, help keep rodent pests at bay, confirming the benefit farmers get from them by just being there. This finding, plus what we will be generating from the analysis of the presence absence data, will form our recommendation on why leopard cat populations should be maintained in these farms, and how they can do that without sacrificing the crops.

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

At the very beginning of the project, I have been in consultation with the farm owner, the *barangay* captain (local chief), the local DENR (Department of Environment and Natural Resources), and the Negros Forests and Ecological Foundation, Inc. During the conduct of the project, other than the research assistant, all the personnel services needed by the project were sourced from the local community. Two guides were employed during the study area survey; three carpenters were hired for the construction of the observation/telemetry posts; locals were also hired to duplicate the traps, and some other locals were hired to guide us in trap placement. Some others were hired to help with the upkeep of the research base (which is essentially the owner's farmhouse).

Even though they were not hired for the entire duration of the project, and only on a need basis, I believe we were still of help to them because these hiring periods would sometimes coincide when there is no work in the farm.

At the end of the project, we also distributed the unused but still viable over-the-counter medicine and donated the first aid kit to the village health centre.

We also visited the local elementary school for a day and conducted an awareness campaign about the local wildlife and their relationship with humans—i.e. how we cannot do without them. The focus is of course on the leopard cats and how they help farmers in keeping the rodent pest population at bay.

5. Are there any plans to continue this work?

I plan on finishing my master's degree first then go back to the Philippines to finish what I felt was an unfinished work on the study of the ecology of leopard cats. By then, I should be armed with other types of traps/snares, knowledge on field techniques and data analysis, and should have more time

than I have right now to prolong my stay in the field should it be deemed necessary by unforeseen events. I have unanswered questions about the life history of the leopard cats in sugarcane farms and I intend to find the answers to them.

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

I presented a poster during the 2011 Borneo Carnivore Symposium which was attended by carnivore experts and scientists working in Asia where I also expanded my network of potential collaborators. I will be presenting this project in a graduate seminar sometime November of this year. I also plan to participate in an international conference to present my paper there and publish it in an international peer-reviewed journal. Reports will also be made available for the use of the local government units, government agencies, and non-profit organisations working in the study area.

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

The anticipated length of the project was 9 months but because we were unable to capture leopard cats in the first 3 months, I decided to change focus while still trapping. The protracted trapping in the hopes of being able to use telemetry to study the leopard cat even though there were only a few months left to the project plus the need to accumulate more scats for use in the new focus of study extended the project two more months, totalling 11 months on field, not to mention logistic preparations, report writing and data analysis.

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
Telemetry equipment (2 receivers, 12 transmitters on collars, 2 Yagi antenna, 2 cables, 2 headsets)	4,065.00	2,816.35	1,248.65	I sent ATS (Advanced Telemetry Systems) three old non-working transmitters and I was given 15% discount per transmitter; not to mention their equipment are cheaper than Biotrack and Sirtrack, in which the proposed amount was based on.
Live traps	376.00	263.17	112.83	I bought one live trap from Tomahawk and had it replicated with some modifications in the Philippines; the labour and materials for which are much cheaper than buying ready-made traps and shipping them to PH. Also, we had several versions of traps made since the first ones didn't manage to catch any cat.
Hair snares	0.00	14.61	-14.61	Since much was saved from purchase and manufacture of the

				live traps, I decided that hair snares also be employed to supplement occupancy methods and to test this particular method for leopard cats in PH.
GPS receivers, flagging tapes, Pesola spring scales	229.00	403.65	-174.65	Only the GPS receivers were applied for in this grant but given the excesses in the other items requested for.
Laser rangefinder (in lieu of 2 transect tapes)	50.00	94.91	-44.91	The rangefinder was much easier to use in the field and can span longer distances than the transect tape saving us time.
Digital callipers, 2-way radios, binoculars	79.00	127.41	-48.41	The binoculars were not in the proposal but were included since savings were made from the purchase of other equipment.
Headlamps	0.00	38.94	-38.94	These were provided for our guides at the initial stages of our project.
Spotlights	0.00	25.84	-25.84	These were used during our evening and dawn surveys.
Pelican case	00.00	57.45	-57.45	This was deemed important to protect the transmitters and other scientific equipment from too much humidity which reaches to the 90's % in the field site, and during transport as well.
Leather puncher, 2 Silva compass	52.00	27.76	24.24	Cheaper but functional compasses were found on another website. A leather puncher was added as well for use on the collars.
Battery chargers	0.00	46.89	-46.89	The downside of the receivers I bought was that it uses AA batteries instead of the longer-lasting rechargeable Li-ion so I had to buy a battery charger and rechargeable AAs instead.
Rechargeable Ni-MH batteries	0.00	43.68	-43.68	
Audio recorders	0.00	56.19	-56.19	After a few transects, we thought it was better to use an audio recorder instead of paper and pen because those were rendered useless when it's raining during the transects.
USB Serial adapter for GPS 76Map	0.00	16.57	-16.57	This was use to connect the GPS to my laptop for data processing and storage.

Desiccant (silica beads)	32	16.57	15.43	Savings was used for other aspects of the project.
95% ethanol	0.00	13.60	-13.60	This was used to store and preserve the scat samples.
Surgical gloves and disposable syringe	0.00	22.15	-22.15	Not allocated for in the proposal but savings allowed for the purchase of these.
Transport tubes	32	8.53	23.47	Savings was used for other aspects of the project.
Forceps	0.00	0.57	-0.57	This was used in processing the scat samples.
Live bait and bait maintenance	0.00	38.34	-38.34	Cane and lab rats and chickens were bought as live bait for the traps and maintained in the research facility. Some bait had to be replaced as well.
SDHC memory cards	0.00	22.84	-22.84	2 good quality HD cards were bought for storage of photos for the project.
Tarps and ground sheets	26.00	0.00	26.00	We realized that we didn't need these on field, so the savings was used for other equipment instead.
Permits and permit-processing	65.00	21.27	43.73	Savings was used for other aspects of the project.
Research assistant honoraria	424.00	1,408.4	-984.40	The budgeted amount was computed for half of 9 months only; prolonged trapping period and fieldwork necessitated the extension of the employment of the RA. Since we did not get the rest of the funding we applied for, and some budget items have excess amounts after expenditure, I decided to pool these together to pay the RA.
Field assistants' honoraria	510.00	113.90	396.10	Field assistants were not employed in the entire fieldwork hence the savings.
First aid kit and medical supplies (humans and animals)	0.00	213.39	-213.39	Because we did not get the funding from another proposal, and because we saved on some equipment and supplies, we spent it on this much-needed kit to provide first aid and basic over-the-counter medicine for all those who work for the project.
Total	6,000.00	**5,932.55**	67.45	

NB: Assumed rate of exchange during time of purchases/expenditures: 0.65 GBP =1 USD. The GPS and the serial adapter are in my possession for data processing and analysis while the rest of the equipment are being kept and maintained by the Negros Forests & Ecological Foundation, Inc. They are also currently using the traps to capture feral cats in the rescue centre to prevent the spread of diseases in the centre.

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

I think it is important that I be able to translate the technical report into something more digestible by the policymakers, farm owners and the local community. This is the immediate next step for me after writing my thesis: translating my analysis into pragmatic solutions so that leopard cats will be protected and allowed to co-exist with the communities living in and around these cane fields. Also, I think it is important that after my project, awareness campaigns continue, not only on behalf of the leopard cats, but also other wildlife found in Negros. I am quite privileged to have Negros Forests and Ecological Foundation, Inc. as my partner-organisation in the area. They have been doing conservation work in the island for over 20 years now, and although they are focused on the remaining forests of the island

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 RSG logo was used in the poster entitled *Orphans of the sugarcane fields* during the First Borneo Carnivore Symposium on 18-22 June 2011 in Sabah, Malaysia. If I get to another international symposium to present this project, I will be using the RSGF logo again.

I have encouraged students from my program at the University of Minnesota to apply for the RSGF as well.