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	(Ms) Thattaya Bidayabha
Project title	Developing Wildlife Monitors: Ensuring Protection for Dong Phayayen Khao Yai Forest Complex, Thailand and a Sustainable Future for its Carnivores– Building the Capacity of Local Staff to Assess the Distribution of Wild Felid Populations and Provide an Indicator of Ecosystem Health.
RSG reference	50.08.09
Reporting period	March 2010 to April 2011
Amount of grant	£5,965
Your email address	thattaya@freeland.org
Date of this report	June 10, 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
Training park rangers in ecological field data collection and recording techniques	-	-	✓	Further funding was obtained from USFWS and so consequently during 2010 four Ranger Based Data Collection (RBDC) Courses were conducted, training more than 100 rangers in the Eastern Forest Complex. Specifically, under these RSG project 25 rangers in Pang Sida NP were trained during a 6-day Ranger Based Data Collection (RBDC) course. A full course report is available as a separate document on an accompanying CD. Prior to that 75 rangers were trained at Thap Lan National Park.
Collect data and analyse to provide an indicator of the overall ecosystem health of the Complex	-	✓	-	Park management participated in designing a 'standard' reporting form for wildlife and violation data. This form is compatible with the park management database (MIST) which has become the accepted standard for protected areas in Thailand. The introduction of the MIST software at Pang Sida is gradual and to facilitate its adoption and use we designed a specific Thai-language course for rangers that enables them to collect data. During this RBDC training course rangers received extensive instruction on collecting data and use of the data form. However, returns on these ranger report forms have been less than satisfactory and the rangers seem reluctant to take on extra work. During training validation exercises rangers constantly express frustration about the lack of institutional support they receive to conduct patrols. Essential equipment is often lacking, there is no budget to buy food for patrols, if GPS or cameras are available then batteries are not and they have to buy their own. This appears to be reason they do not want more work. More support and decisive leadership from park management will achieve better returns with the report forms. It seems highly unlikely that the situation will improve without an increase in support to

				increases morale and incentive among the patrol rangers. On a positive note during the project irrefutable proof was obtained through camera trapping that the DP-KY is still home to a substantial population of Indo-Chinese tigers. This helped increase the status of the DP-KY by its inclusion in the new Thailand Tiger Action Plan. It is generally accepted that the presence of tigers can demonstrate the relatively good health in an eco-system and that poaching is not out of control.
Improved documentation and information on the status of carnivores in the DPYKY			✓	Project staff from FREELAND conducted on-the-job training for rangers during monthly wildlife surveys. As food and supply support was available the rangers were enthusiastic about participating in surveys. Report forms were jointly completed, and FREELAND staff were able to validate information collected and included in the park documentation. This led to the collection of data on 17 confirmed carnivore species, including a new record for Spotted linsang (*Prionodon pardicolor*) which had never been recorded in DP-KY previously. Distribution GIS maps have been prepared for each carnivore species in conjunction with park management.
Greater awareness among officials of the importance of monitoring for endangered species		✓		In lower level officials and rangers there has definitely been an increase in awareness concerning monitoring of carnivores. More than 40 rangers have received on-the-job training during the regular monthly surveys. Their enthusiasm has increased remarkably since they saw camera trap photographs of tigers, clouded leopards and other carnivores. More awareness work is required for higher ranking park officials, since they are more focussed on larger problems and management issues that the park faces such as budgets and major crimes such as logging and encroachment. The possibility of increased funding for park protection following its inclusion in the Tiger Action Plan has recently stimulated interest more. Further awareness is still required so the officials can support the rangers more to conduct surveys and protection activities.

Improved ranger capacity within the DPYKY world heritage complex leading to an increase in ranger activity and presence in the parks			✓	Through this project and other parallel capacity and support activities FREELAND has increased ranger capacity to patrol, survey and conduct community engagement activities. With increased support in the form of equipment and training the rangers are more confident in maintaining a presence in the park and they have a greater understanding of types of patrolling, some of which are designed as a deterrent.
Reduction of poaching due to increased ranger activity in remote areas of the complex		✓		As very little in the form of base-line data on illegal activities are available - it's presently still not possible to conclusively say if poaching has reduced due to increased ranger activity. It is critical to build awareness that support for patrolling is essential to make patrols meaningful and effective.
Identification of high-risk areas for poaching in the complex		✓		Through camera trapping we have identified main routes into the forest that poachers regularly use. This information has been shared with the park management that uses it to prioritize where patrols should concentrate 'choke-point' track-sits and ambushes. We have also found that some remote areas actually experience fairly low levels of poaching. This again helps dictate where patrols should be sent.
Planning and frequency of enforcement patrol routes (to intercept poachers) will take into consideration carnivore distribution will be adjusted as new data on species distribution and ecology become available.		✓		Luckily, presently poachers are concentrating on smaller mammals. There appears reluctance among poachers to hunt larger mammals, according to villagers, as they fear prosecution. Whereas they feel that poaching smaller mammals such as civets, squirrels and lizards is unlikely to be investigated. In the last year poachers have very occasionally been arrested poaching deer, wild boar and serow. Nevertheless, it is important for officials to realise that as the price of rarer or species in particular demand rises then the fear of arrest is lessened as the rewards become more lucrative. We suspect that as word spreads that species of value such as the larger carnivores are still present in the park then poachers form outside the area will come looking for them. So, we feel its important rangers continue to

				receive training in anti-poaching patrol methods and for some to receive higher police-style investigation training.
Developing greater pool for future leaders in wildlife conservation in the Parks Department			✓	During each training course enthusiastic or gifted participants are identified and during consecutive courses their skills are built-upon by further training. This is achieved by allowing them to participate as coordinators to understand more about course content and delivery. Following this, if possible, they participate in team-leader training which includes a section on how to teach. During the implementation of this project four new RBDC trainers were developed. Two have proved excellent, but two are a little too introvert to be comfortable as instructors, despite the fact that they know the curriculum very well. This proves that train-the-trainer courses are not effective as one-off activities and the process for developing trainers is a long-term procedure requiring more resources than many projects allow.
Foster interest of high-ranking officials and staff from other protected areas to increase support for further monitoring teams		✓		Initially work on this project was in Thap Lan National Park, but this was expanded to Pang Sida National Park when a request for assistance was received. This matched well with our proposed workplan and it allowed us to conduct the proposed RBDC training course at the intended site at Pang Sida. We also managed to bring a small number of rangers from two other sites, who took their new skills back to their workstations. This coupled with our discussions with Superintendents from other sites created a better awareness of the problems of rangers being under provisioned or supported. Government budget requests are slow and so it's unlikely that any improvement will be seen for now, but this did lead towards the inclusion of support for these in the new Thailand Tiger Action Plan. Specifically: • Increasing pay and benefits for rangers in

				dangerous situations. • Increasing opportunities for career progression for officials. • Increase penalties for all wildlife crime in Thailand (these have not changed since 1993).
Rangers receive training in communication skills, GPS and navigation equipment.			✓	This section worked well during the RBDC course and the donation of equipment meant that rangers could continue using their new skills. They understood more complex uses of GPS, including entering waypoints and using the 'Go-To' function. The introduction of GIS and its uses on the RBDC helped them understand how a GPS coordinate can be converted and used in GIS maps demonstrating any particular aspect of their date collection, such as violations, encroachment or wildlife distribution.
Parks in the complex receive essential equipment (GPS/GIS and camera equipment)			✓	Essential patrol equipment provided to participants in the enforcement course and technical equipment during the RBDC Course. This included equipment bought under this grant and donated by other donors. Totally over the last year we donated 140 compasses, two new PC computers, six secondhand computers, 15 GPS, 36 digital cameras and batteries to parks in DP-KY, ensuring all parks received necessary equipment for data collection equipment. Specifically, under this grant five GPS were donated to Pang Sida NP. We were also able to donate digital cameras purchased from a private donor. The camera traps purchased under the project remain with FREELAND and in use in the field all year round, as the parks do not have a budget to buy expendable items such as batteries, silica gel to run them, or food to enable them to stay in the field for surveys. FREELAND are therefore jointly conducting surveys with the park to guarantee the camera traps are out in the field and placed in a timely and regular manner to ensure optimum data collection.

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

The two most challenging problems experienced during the duration of this project was the low response to the field data forms and ensuring MIST installation to be site-specific for Thap Lan.

Problem 1 – Low response in using data forms
We tried many approaches to gain improved returns of data forms, including offering prizes, in the form of field equipment, discussing the problem with the park superintendent, canvassing rangers directly, showing how other parks obtain and manage data and providing sufficient blank forms. What we have found out is that this is a typical problem that many sites utilising MIST face and all have finally come to the same solution. This is to employ or support one member of staff to follow-up with rangers and enter data into MIST directly. This is not a long-term solution though, as it is not sustainable to simply embed an NGO worker in the park offices. This work is an aspect of park day-to-day responsibility that the management should be ensuring staffs provide full compliance, since the MIST system has been adopted at the national standard for protected areas.

For the foreseeable future, until improved adoption is MIST is taken-up, FREELAND proposes to employ a MIST database technician and have him/her based in the park office to help ensure MIST is fully utilised. This new employee will be able to travel to other sites and support them also, as required.

Problem 2 – MIST installation and use at Thap Lan
There was a delay in training MIST database staff as the main training organisation in Thailand was busy and could not fit the training course into their schedule. This delay could have added to the slow uptake of data collection as the original enthusiasm and the momentum created in the March RBDC was lost. Three people were trained, but actual installation and operations of the MIST database has proved much harder than anticipated, since Thap Lan spreads over 2 UTM data zones. We now propose to invite an independent trainer to train the proposed new FREELAND employee, who will be based in the field, then we will have the internal capacity to independently conduct further MIST training courses as required, without being dependent on other agencies.

MIST training
Three officials from Thap Lan National Park (Wanchai Lad-Sai, Sarawut Chandachoat, and Watcharapong Thanoopakorn) were trained in the use of MIST park management database software during the implementation of this project.

These are the three staff assigned to manage all reporting and data management at Thap Lan. The MIST training course was divided into two sections; the first part was between September 30th and October 1st, 2010, when the group travelled to Huai Kha Khaeng Wildlife Sanctuary, Western Thailand, to observe a monthly patrol meeting where rangers actively gather information during patrols for inclusion in a MIST database for the park (note: this is a separate trip to the one where protection managers and rangers visited HKK). This first section was to help them understand the processes of how data is obtained and fluidly transferred into a park management database and how information is subsequently utilized for patrol planning.

During the patrol meeting, team leaders from 20 patrol teams covering four management zones in Huai Kha Kheng WS presented photographic images from their previous patrol and submitted all

data, including GPS patrol routes, photographs and patrol reports to the database manager. These were immediately assimilated into the GIS database and a map created which was shown live during the presentation. In this manner all the patrol team leaders could see all patrol routes from the entire month displayed together. Following this they shared experiences from the patrols with the park enforcement and protection manager. Team leaders finally considered their strategic patrol plan and were issued with supplies, such as batteries and field equipment to utilize during the consecutive months patrolling. The Thap Lan staff participated and observed the entire procedure and discussed aspects with the rangers, database manager and enforcement manager to fully understand the process.

The second period of the training course for the Thap Lan officials was held between October 20th to 21st, 2010 at the office of the Wildlife Conservation Office, Department of National Park, Wildlife, and Plant Conservation (DNP), Bangkok. This time, two officials from Thap Lan NP participated (Wanchai Lad-Sai and Watcharapong Thanoopakorn). They received an introduction to MIST park management database including the use of the programme, and its installation from a member of staff from the Wildlife Conservation Society (WCS) Thailand Program (Pornkamon Jornburom). The officials then returned to their base at Thap Lan to install the software and initiate its use.

We have learned that the introduction of MIST at Thap Lan NP may not proceed as quickly as we would like, as the software is complicated and installing it and setting it to be site specific is difficult. A further obstacle is that the park is split across 2 UTM grid zones, meaning that the GIS component of MIST does not operate correctly. We are researching ways to resolve this.

The MIST software is also full of bugs and complexities, which take considerable time to understand and rectify. Furthermore, the software responds in different ways depending on the version and the computer's operating system and it is incompatible with the latest Windows 7 operating system. We are now aware that for successful installation and implementation of MIST, database managers need intensive on-site assistance. During 2011 FREELAND will have a member of staff based in the Thap Lan office to ensure the system is brought into full operation.

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

3.1. Confirmed tiger presence in Thap Lan and Pang Sida

During the camera trapping and surveys, we obtained data on other wildlife that frequents the same habitats as the clouded leopard. This data included some pioneering data on tiger presence in the area. This information is very useful, as it may stimulate tiger conservation funding to be directed at the project site. Such funding support will have a beneficial effect on almost any aspect of conservation and protection work in Thap Lan, especially to large and mid-sized carnivores such as clouded leopards. In the past the site has received almost no support for training, surveys, or outreach, despite being a UNESCO World Heritage site. Consequently, there has been a low understanding of the status of almost all species of wildlife and what is happening to these populations.

3.2 Confirmed a breeding clouded leopard presence in Thap Lan and Pang Sida

The dearth of information on wildlife also includes clouded leopards. So, the fact that a female with young was photographed categorically proves the clouded leopards are more than just present, they are breeding too. This species is so enigmatic baseline data on its distribution is hard to find and so proof that they occur and in Thap Lan is good news for the conservation and management of this

species. We hope that this evidence that clouded leopards live and breed in Thap Lan may also stimulate conservation support to help protect this species and perhaps even encourage a researcher to spend more time understanding the species dynamics in the park.

Clouded Leopards in DP-KY

During the period between January 2009 to February 2011 we recorded 23 mainland clouded leopard (*Neofelis nebulosa*) photographs in the Dong Phayayen-Khao Yai Forest Complex.

These included a mother with two cubs, as well as several adults, possibly as many as seven different individuals. The area that most photographs were obtained is relatively small (20 km^2) and most photographs were recorded at just two sites, so it would appear that the density that they can share territories is quite high.

We examined the photographs of the clouded leopards to attempt to identify individuals. This was achieved by comparing pelage of each animal, looking for common markings in the coat patterns, such as the larger swirls, reticulations and spots. With the exception of two photographs the animals appeared to be different individuals.

In every photograph the clouded leopards were on the ground (as none were placed on arboreal crossings) looking relatively at ease, as they passed the cameratraps. There did not appear to be any influence on the clouded leopard's behaviour from other carnivores that frequent the same habitat such as tigers (*Panthera tigris corbetti*), Asiatic black bears (*Ursus thibetanus*) or sun bears (*Ursus malayanus*). It should be noted that no records of leopards (*Panthera pardus*) were obtained.

On two occasions tiger faeces were found with carnivore remains in it, such as binturong (*Arctictis binturong*) and Asiatic black bear, but mostly the tiger faeces consisted of wild boar (*Sus scrofa*) hair and remains, suggesting that intra-guild predation does occur - but is not common. No clouded leopard remains were found in tiger faeces.

No particular time pattern recorded, and camera trap photographs of the clouded leopards were obtained both day and night.

3.3 Inclusion of the DP-KY in the Thailand Tiger National Action Plan

This point is related to point 3.1 and concerns funding for conservation support activities. Although DP-KY is not the primary tiger conservation site in Thailand (Huai Kha Kheng WS is that site) the inclusion of the DP-KY in the Thailand Tiger National Action Plan[1] nevertheless helps raise the profile and importance of Thap Lan and the DP-KY. We hope prospective donors or international conservation organisations will read and follow the set of priorities in the Tiger Action Plan which include very specific activities designed to sustainably conserve tigers and consequently all wildlife in parks in Thailand. These are applicable to both the Eastern and Western Forest Complex's.

[1] Thailand National Tiger Action Plan (2010-2022) www.dnp.go.th/TigerCenter/Thailand_tiger_action_plan_2010-2022.pdf

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

School community outreach using the clouded leopard as a focal species was conducted this years. This was not funded under this grant, but came via support from the Clouded Leopard Project www.cloudedleopard.org . This complimentary outreach work undoubtedly has a beneficial effect to the park and its wildlife, as awareness is raised. Over the last year outreach activities in schools and communities around Thap Lan and Pang Sida reached more than 2,800 people and delivered a message about carnivore conservation and ecology. As most villagers rely on forest products in one form or another – a healthy forest is in their best interest and FREELAND staff have improved the students and villagers understanding of how people and nature can survive together.

5. Are there any plans to continue this work?

We hope to continue this work to ensure that MIST is fully integrated in the park management systems and that data is collected, entered and analysed. To this end we will be writing more proposals which attempt to muster support for this. We have plans to continue all types of conservation support for DP-KY, following the timescale and plan outlined here. These support activities will include training for officials, community outreach, wildlife monitoring, and park management support.

Phasing of FREELAND conservation support activities across the DP-KY

Implementation Period	Thap Lan NP	Pang Sida NP	Ta Phraya NP	Dong Yai WS	Khao Yai NP
Yr1: 2010	Started				
Yr2: 2011	Continue	Started			
Yr3: 2012	Continue	Continue	Start		
Yr4: 2013	Continue	Continue	Continue	Start	
Yr5: 2014	Continue	Continue	Continue	Continue	Start
Yr6: 2015	DNP independently manage	Continue	Continue	Continue	Continue
Yr7: 2016	DNP independently manage	DNP independently manage	Continue	Continue	Continue

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

This project was not a research project, more of a park support work. All information and data has been copied to the park. Some information concerning tigers has already been disseminated to other conservation groups. This has led to increased interest in the site, especially since it contains a population of tigers. We have been in contact with Thai researchers and universities to see if any institutions are interested in placing students with the project. There is some interest from the Zoological Society of London to place MSc students in the field. This may take 8 months to a year to

proceed though, as all research permit requests must be processed and approved by the National Research Council of Thailand (NRCT). One post-graduate PhD had a project approved to work with us in Thap Lan, but unfortunately was offered a teaching post in South Africa and decided not to take up the opportunity in Thailand.

If their requests for information or data we propose to share everything we have in hand, provided the Department of National Parks approves this as co-owners, with mammal researchers in Thailand.

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

The project was originally planned as a one-year activity starting January 2010 and finishing December 2010. There was a slight delay in buying equipment as it needed to be imported from USA and this was not obtained until February and it could not be utilised in the field until April 2011. Therefore, we slowed the phased implementation and spread some activities into early 2011 to compensate for this delay.

X – proposed implementation date ✓ = actual implementation date	**2010**												**2011**					
Activity	**Ja**	**Fe**	**M**	**Ap**	**M**	**Ju**	**Jul**	**Au**	**Se**	**Oc**	**N**	**De**	**Ja**	**Fe**	**M**	**Ap**	**M**	**Ju**
Provide training for 25 Thap Lan NP rangers (100 trained)	x		✓ TL			✓TL			✓TL			✓ PS						
Establish monitoring teams		x	Parks are unable to fund independent wildlife monitoring teams and so rangers are appointed to join routine monthly surveys with FREELAND for on-the-job training. We are researching ways to assist the parks to appoint one team member from each patrol as the 'wildlife ranger' to gather data, as it seems unlikely that wildlife monitoring specific teams in National Parks will be funded for the foreseeable future.														
Setup camera traps & prepare/monitor transects at Thap Lan NP			✓ TL	✓TL	✓TL	✓TL	✓ TL	✓ TL	✓TL	✓ TL	✓ TL	✓ TL	✓ TL & PS	✓ TL & PS	✓ TL & PS	✓TL & PS	✓TL & PS	

Provide on the job training for rangers (40 trained)			✓ TL	✓T L	✓T L	✓T L	✓ TL	✓ TL	✓T L	✓ TL	✓ TL	✓ TL	✓ TL & PS	✓ TL & PS	✓ TL & PS	✓T L & PS	✓T L & PS	
Introduce and install MIST database at Thap Lan NP										✓ TL	✓ TL	✓ TL	✓ TL					
Monitor data entry and check Db working correctly											Parks still not able to independently manage this task, FREELAND to employ on-site staff to assist for at least one-year from July 2011							
Compile data to produce monthly reports and GIS database	x		x		x		x		x		Parks still not able to independently manage this task, FREELAND to employ on-site staff to assist for at least one-year. It is anticipated MIST reports could be generated by September 2011							
Collate entire years data and compile project report													x					✓T L & PS

X – proposed implementation date **✓ = actual implementation date** TL = Thap Lan National Park, PS = Pang Sida National Park

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
Five-day Wildlife Research workshop for 25 rangers and 5 researchers	£2,744	£2,740.62*	£3.38	This workshop has a separate report (4-2010) and was extended to cover 6 days. Still came in under budget
GPS (Garmin 60csx) and accessories (x5 units)	£915	£1,043.83*	-£128.83	Actual cost was a little higher than anticipated due to increase in vendor cost. Donated to Pang Sida NP – December 2010
Camera traps (Moultrie 5V) (x10 units)	£1,220	£1,042.41*	£177.59	We were able to purchase 10 camera traps as they were on special offer at the time of purchase. All are presently still In

				use on the joint PSNP-FF surveys
Flash cards for digital cameras	£122	£46.53*	£75.47	Still in use with camera traps. Price on SD cards continues to fall as memory size increases.
Steel boxes to protect camera traps (from theft and elephant damage) (x10 units)	£305	£357.34*	-£52.34	Still in use with cameratraps, cost slightly more than predicted due to increase in quantity
Office supplies (printer ink, paper, CDs etc')	£244	£311.65*	-£67.65	Reporting purposes, slightly more than anticipated, as more reports circulated to stake-holders
FREELAND (7.5%)	£416	£416.13*	-£0.13	Administrative cost for all projects
Incoming ban transfer fee	0	£9.37°	-£9.37	°Based on rate of 53.3325/£1.00
Total	**£5,965**	**£5,967.89***	**-£2.89**	*Exchange throughout project was based on the rate the grant was received on January 7th 2010, this was 52.8936/£1.00

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

The work that this grant funded has been catalytic in generating a lot of interest in conserving carnivores in Thap Lan and the DP-KY Forest complex. Many of the proposed activities in the first year's work plan were successfully completed but are still not completed because of unanticipated constraints and technical problems. The main priority therefore must be the continued pursuit of the objective to get MIST operational in Thap Lan National Park and later other sites in the DP-KY. Given that problems achieving this have now been identified and that park management are fully supportive we feel this goal is fully achievable with a little more time and funding spent on the project. Later associated with MIST implementation; Step 2 will be to accumulate baseline data and Step 3 will be to start generating reports that the park management can utilise to protect Thap Lan and its resident carnivores. Although this will need a MIST technician on-site for some time to guarantee this becomes a reality there will be advantages as the new FREELAND technician will be able to; a. train his counterpart official while himself gaining experience and b. Utilise his abilities later to expand the use of MIST to other parks in the complex using Thap Lan as a 'model'. We propose the second focal site to implement MIST will be Pang Sida National Park.

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 during RBDC training courses and on the training, course reports (see attached RBDC #4 report). The RSGF logo was uploaded onto the partner's page of www.freeland.org and remains there today. Rufford Small Grants was mentioned as we talked to partners and journalists that visited the project.