

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.

Grant Recipient Details	
Your name	Jiraporn Teampanpong
Project title	Maintaining avian diversity in the working landscape of the southern Tenasseri Western Forest Complex Corridor in Thailand
RSG reference	9620-1
Reporting period	April 28th 2011 – May 31st 2012
Amount of grant	£6000
Your email address	teamp001@umn.edu
Date of this report	June 30th 2012

Josh Cole, Grants Director



1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not	Partially	Fully	Comments
	achieved	achieved	achieved	
Scout nests of 4			\checkmark	Besides scouting active and non-active
hornbill species				nests, my team has fixed two nests to see
(HB)				whether hornbills will use them again in the
				following years. At existing nest cavities
				that could easily be accessed by climbing,
				we found poor nesting conditions such as
				cavities that were too shallow or too deep,
				infestations by ants, and cavity entrances
				that were too large or too narrow.
				Currently, I have found 34 nests (both
				active and non-active) for four hornbill
				species. Of this number, 13 and 16 were
				active in 2011 and 2012, respectively.
Capture and attach			\checkmark	I captured and tagged one Oriental-pied
transmitters on HB				and two wreathed hornbills in 2011 and
				one great and three Oriental-pied and
				hornbills in 2012.
Track HB		\checkmark		From June 2011 – until now, one Oriental-
movement				pied and two wreathed hornbills have been
				continuously tracked using radio telemetry.
				The three tagged Oriental-pied, and one
				great hornbills captured in 2012, have been
				tracked since May 2012 and tracking will
				continue until April 2013.
Determine		\checkmark		662, and 137 and 45 point locations of the
movement, home				Oriental-pied, and two Wreathed hornbills
range, and habitat				were collected through radio telemetry
use of HB				from June 2011 to February 2012. These
				numbers do not exclude errors due to
				challenging landscape using a reference
				test. However, data analysis on this part
				has not started yet.
Conduct point			\checkmark	Due to lack of field assistants, I changed the
transect survey on				survey plan from monthly to bi-monthly
hornbills and				after July 2011. As a result, total replicates
frugivorous birds				at each point transect lines are 10 rather
				than 12 as initially planned.
Study plant		\checkmark		Plant community and structure study along
community and				four point transect lines have been
structure along				completed since October 2011. I have
point transect lines				recommenced the plant community survey
				again along the five remaining transect
				lines in June 2012 and expect to finish all by



Objective	Not	Partially	Fully	Comments
	achieved	achieved	achieved	
				July 2012. One field assistant (BSc in
				Forestry) will help with plant community
			/	study survey in the field.
Study plant			V	Due to lack of field assistants, I changed the
phenology along				survey plan from monthly to bi-monthly
point transect lines				after July 2011. As a result, the total
				replicates at each point transect lines are
				10 rather than 12 as initially planned.
Study human			\checkmark	Due to lack of field assistants, I changed the
disturbances along				survey plan from monthly to bi-monthly
point transect lines				after July 2011. As a result, the total
				replicates at each point transect lines are
				10 rather than 12 as initially planned.
Study local bird		\checkmark		Three training sessions have been led for
knowledge				volunteer students. Only two students and
				two youth groups (about 2-3 people) are
				happy leading interviews for this project.
				The challenge that discouraged students
				from joining this activity was mostly the
				time conflict with their activities at school
				and home. Currently approximately 70% of
				the required sample sizes have been
				interviewed.
Assess needs for		\checkmark		A pilot study on needs assessment for bird
(bird) conservation				conservation clubs for local communities
club for local				was launched on May 20th 2012 with two
communities in the				local leaders, two local nature educators,
southern				and kids in grade 6-12 from two schools.
Tenasserim				Subsequently, the interview form and
Western Forest				interview style were adapted for easier use
Complex.				and to record key points of the research.
				Currently, I have interviewed local leaders
				at five from 14 villages, directors and
				educators at 10 from 14 schools and led
				focus group interview with local students
				from grades 6-12 at three schools.
				Originally, this part of the project focused
				on assessing the need for an avian-
				ecotourism curriculum for vouth tourist
				guides who have been trained through the
				mini-guide program initiated by the Office
				of the Basic Education Commission of
				Ratchaburi province started in 2009.
				Unfortunately, the programme was
				terminated in 2011 due to unsuccessful
				results. Mini-guides did not serve tourists'



Objective	Not	Partially	Fully	Comments
	achieved	achieved	achieved	
				needs. As a result, I changed the research focus slightly to the need for bird conservation clubs in local communities of the southern TWFC. I kept the original questions that were approved by experts and added more questions about their attitudes toward and interests in local bird conservation clubs. I expect to finish this research by August 2012. The target groups are larger. The focus includes not only local school and conservation administrators but also local administrators who have an influence on local activities but may not work mainly on conservation. The extended group of key informants includes village leaders (current and prior leaders for some communities) and chiefs of the Sub-district Administration Organization. The new research topic will include more local students in the samples. I have adjusted the range of student informants from only trained mini-guides to local students in grades 4-6, 7-9, and 10-12 from schools in the study areas.

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

- I. Three helicopter crashes in Kaeng Krachan National Park: In July 2011, three helicopters of the Royal Thai Army crashed in Kaeng Krachan National Park (KKNP), south of Maenam Pachee Wildlife Sanctuary (MPWS), my study site. The army and rangers suspected that the accident probably involved a Karen group who had been living both in KKNP and MPWS as well as Karen rebels of the Karen National Union (KNU). As a result, the superintendent of Maenam Pachee Wildlife Sanctuary was very aware of the potential dangers of working in the forest, especially my study area, which is close to the border between Thailand and Myanmar. He asked me not to work in the field until the Thai Army could make sure that there were no potential dangers for a research team, and it took about a month. In response to this difficulty, I adapted the field plan from working at the Royal Princess Project, so the field work continued except tracking hornbills.
- II. **Illegal hunting/trade of elephants**: In December 2012, an elephant was killed in KKNP and later in January 2012, the poachers were caught in MPWS close to my field site and the national border. Those involved were Karen people who had been living in MPWS and they had been communicating with Karen groups living in KKNP and MPWS.



Some park rangers believed that one of my field crew was also involved in the illegal elephant hunting /trade but there was not sufficient evidence to arrest him. Later on in April 2012, I fired this crew member because he disappeared into the forest without notice for most of the month of March, even though he was aware that I had planned that he and another field crew member should lead monthly tracking of hornbills and scouting of new hornbill nests.

Before I fired this person, I talked with the head of the ranger station that takes care of Phurakam village and the vice head of the village. They all suspected that this crew member were involved in the illegal trade of elephants. They noticed behavioral changes; he was nervous, drunk, and wayward after the elephant-hunting gang was arrested. I tried to convince him to change his behaviour and go back to work again but he threatened me by saying that he wanted more money, otherwise he would resign from the project. The key reason that I decided to fire him was that he did not fulfill his responsibility to be in charge of monthly and other duties.

After I fired this crew member, I found a local villager who had just lost his job in Bangkok due to the flood. Unfortunately, because it took time to recruit the new field crew member and train him to use a radio receiver, I lost the hornbill tracking data for 2 months (March and April 2012). However, in an attempt to make up for this lost data, I asked two field crew members to extend the hornbill tracking period from 4 to 8 days in May 2012.

During that time, the park superintendent prohibited me from working in the field for my safety. Also, park rangers were unable to help me in the field even in the other site in MPWS because they had to prepare for any unforeseen event in relation to illegal hunting/trade of elephants. I solved this difficulty by switching to work at the Royal Princess Project, so the field work continued.

III. Strange weather in 2011: The quality of field data on bird distribution and abundance generally depend on weather. Consequently, surveys taken when there is rain, fog, and wind may bring about biases. The strange weather in 2011 became a key challenge and caused the field work to be delayed. It rained from February 2011 and sparsely continued until the end of the year. Sometimes in the dry season (March and April), the weather became abruptly cold, windy, and foggy. All these phenomena caused abrupt changes in the field work plan.

To solve the problem, I had to stay at each site longer than originally anticipated to wait for clear weather and start the survey in appropriate conditions. If there was rain, wind, or fog during the survey, I stopped the survey and started it again when the weather was clearer, usually on another day.

IV. Lack of field assistants: Because my dissertation is based on short-term research, the field assistants that I recruited helped only temporarily because they later found permanent jobs. There were three temporary assistants who helped with the project. After August 2011, when the last field assistant resigned from the project, I decided not to find a new field assistant but to change the field plan from monthly to bi-monthly survey.



At present, I have led 10 replicates of the transect survey. Lack of field assistants has caused a delay on all planned activities including commencement of social research as well as the plant study community.

V. **Time conflict between myself and volunteer students:** I led three training sessions for 35 local volunteer students during August 6-7, and 13-14, and October 9, 2011 for students in grades 9-12 from Bankha Wittaya, Suan Pheung Wittaya, and Rujiraphat Schools, respectively.

The first field data collection through interview happened during the school break in September 17th 2011 at Ban Huai Suan Phu village with volunteer students from Bankha Wittaya School. After the first interview, a time conflict between me and volunteer students caused the postponement of the following interview. Even though I offered the weekend for working with volunteer students, it was not enough due to the students' busy activities at schools and at home.

I decided to commence the second interview during the school break from March 2012 to May 15th 2012, after the transect survey had been finished. Even during the school break, some students had to work full time to help support their families. They tended to favor working at factories or governmental offices because of higher compensation. Parents of some students did not allow them to work outside even though they attended the training.

Currently only two volunteer students from Bankha Wittaya School, three local youths from a conservation group in Ban Pongkrating Bon village, two local youths from Rabbit in the Moon Foundation, and two local people from Ban Takolang have helped with interviewing. After those two students worked with me, they had learned about doing research and to the importance of completing all fields in the questionnaire. They had fun because they had rarely gone outside school and home and had never worked with local people. Now, they are able to identify birds along the roads near their homes and have learned to use the Guide to the Birds of Thailand for personal identification and interviewing.

At first, volunteer students felt that it was very difficult for them to learn how to lead an interview effectively. After leading several interview sessions, they learned from me how to elicit the right answers and they developed their own interview styles. At present, approximately 100 samples are needed to complete this research section, and I expect to finish it by August 2012 with help from volunteer students and local youths/people.

- VI. Personal health problems: In November 2011, I started having low blood pressure and depression. I occasionally visited a doctor to treat my health problems. The potential cause was accumulated stress from research activities, field challenges, paper work, and funding problems. Lastly, at almost the end of May 2012, I had Benign Paroxysmal positional vertigo. I sometimes had to stop working for a week or more to get enough rest so that I would be able to work in the field again.
- VII. **Bridge funding:** After I got the funds from Rufford, I attempted to prepare several grant applications and proposals to submit to various granting agencies so that I would have enough funds to complete all research activities. I did not get any support until May 2012 when the Bell Museum agreed to provide a second fellowship for Avian Conservation.



Formerly, I used personal funds to support my field data collection and the second Bell Fellowship can be used for reimbursement as well as to support the remaining field work.

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

- I. Findings from field study both on landscape use by hornbills and their movement, and the transect survey on the distribution and abundance of hornbills and fruit-eating birds, plant communities, fruit phenology, and threats to wildlife in the southern TWFC will illustrate a correlation between the distribution and abundance of hornbills and fruit-eating birds, and biophysical factors that can be used to generate their predictive distribution modelling in the southern TWFC and determine key habitats and areas for conservation planning in the southern TWFC.
- II. Knowledge from 3.1 and associated GIS analysis, findings from the study on local knowledge on hornbills and local birds, and needs assessment on bird conservation clubs in local communities of the southern TWFC can be used to develop an appropriate local guide training/curriculum for avian-ecotourism and conservation that is suited to the local practices of communities in the southern TWFC. It will also conserve some local knowledge about birds and hornbills for current and upcoming generations.

For example, elderly Karen people have the belief /legend that the hornbill, especially the great hornbill, is the symbol of true love. From the interviews, it is apparent that local elders have known that hornbills are monogamous and have very unique breeding and nesting behaviors. They taught their descendants not to hunt hornbills particularly in breeding season and to be honest to their spouses as hornbills are. I believe that they obtained this knowledge from local elders in the villages and from their own observations while they were living in the forest (almost 30 years ago before MPWS was demarcated and the government moved Karen people to Phurakam and Nongtadung villages). Unfortunately, this knowledge has been gradually vanishing over time. People over 30 years old have heard these ideas but they have not spread this knowledge to the current generation because they and their descendants have rarely seen hornbills around the village. Thus, hornbills have become a topic that is seldom discussed with children.

This is key background information about the communities and is necessary for effective conservation planning, for establishing a local conservation club, and for engaging local people in community-based conservation.

Based on the results of this research, I expect to establish the bird conservation club and develop the curriculum as well as other activities that improve local engagement in conservation in the southern TWFC after I have completed my PhD and become a lecturer at Mahidol University, Thailand.

III. Local participation in the project, whether as project collaborators, field crew members, volunteer students, or key informants in social science research, is a key to grass roots community-based conservation in the southern TWFC.

I believe that all participants have developed broader knowledge and awareness about natural resource management and conservation in their communities. It is hand-on



experience that promotes their conservation awareness that they are unable to receive from schools, elders, or family. Participation of local people in research procedures has also encouraged other local people to think and be aware about conservation of natural resources in their villages.

Here are some instances of key outcomes from local participation in research: First, trained volunteer students have understood the importance of forest areas in their communities from local, regional, and world viewpoints. Before participating in the project, none of the 35 students knew where Maenam Pachee Wildlife Sanctuary, one of the two protected areas in Ratchaburi province is located and what the southern TWFC is and where it is located. After working with me for a while, one volunteer student expressed her interest on establishment of a conservation club at her school.

Second, local people from Phurakam village who have not worked with the project expressed their interest in hornbill conservation. They said that if funds were available, they would be able to assist in scouting and taking care of hornbill nests as my field crew had done and to see hornbill conservation activities in their village as happened in Budo-Sakai National Park under the Thailand Hornbill Project. They said the situation may be less risky than southern Thailand because they can communicate with other Karen groups living in KKNP and MPWS as well as Karen rebels (Karen National Union: KNU) to protect hornbill habitat and nest sites.

Third, inside information about potential hornbill nest sites provided by local people in the same or adjacent villages can be easily retrieved by field crew members because people are comfortable communicating in local dialect. Locals are not as comfortable with strangers like me (even though I worked in the area for almost 2 years and participated in local monthly meetings). As a result of their ability to communicate well with locals, my field crew members detected many new active and inactive nests of hornbills. In most cases, local people can tell exactly where hornbill nests are. Many of them observe hornbill nests when they climb up trees to collect wild honey and *Parkia speciosa* in the forest. Some local people now agree that my research benefits their forest and their community.

The last example is from the interviews. Informants have realised the reduced numbers of hornbills and other medium and large sized mammals from the forest. Because of the presence of family members at interviews, local people have learned that their descendants have lost their chance to see many kinds of wildlife including hornbills. The last benefit of this project is to encourage local people to think about natural resource uses and conservation in their communities. Even though I have not yet analysed interview data, I believe that local people tend to support conservation but they do not know how to initiate or to participate in it without interrupting their routine jobs/duties.

I think local participation in any research procedure under this project is the first step to gaining their support for a local conservation club and for sewing the seeds of community-based conservation in communities in the southern TWFC.



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

As engaging local people is part of this research, I have explained this in my response to the above question. Here, I will give a little more detailed information about activities that they participated in.

1. Involvement of local People from Phurakam Village

Local people, even though they are illiterate, are key to the success of hornbill study as well as transect surveys in this project. They learned to use GPS, compasses and radio receivers for tracking hornbills, and to fill in the data forms. They helped to scout for 16 active and 19 inactive hornbill nests (for 2012), to fix two inactive nests, to check nest status during breeding season, and to communicate with local people to save hornbill nests found during this research. They also helped to monitor feeding behaviour of hornbills before capture to make sure that the chicks were ready to emerge from nests so that the possibility of females and the chicks surviving the absence of male hornbills was high. Local people also helped tag, capture, and track hornbill movement using radio telemetry from June 2011 to present. In addition, they also learned to collect plant specimens, to set up plots for plant community study, to check plant phenology and other related field activities.

The benefits that local people obtain from being part of this project are not only income but also the satisfaction of joining field activities and learning about the nature of hornbills. They are also happy that they can stay home with their families and do not have to find a job in town.

The other benefit that local people might not be aware of is that through the hands-on experience that they gain from the project, they also gain knowledge that they can disseminate to the younger generation. Potentially, with the establishment of a bird conservation club in the southern TWFC, they will become key speakers who can share their experiences with other local people and children.

2. Involvement of volunteer students

I recruited local students as volunteers to lead semi-structured interviews in this research. Besides the deepening of their understanding of the importance of forest areas in their communities, they also gained hands-on experience in leading interviews and communicating with people. They have incurred some income from leading interviews as well. The excess benefits that a volunteer student has obtained include their broadened social network in other communities (such as with the local youth group in Ban Pongkrating Bon village), and friendship and services from me such as suggestions about higher education, learning abroad experiences, textbooks for preparing for university admission, and informal talk about birds along the way to lead interview with local villages, etc.

5. Are there any plans to continue this work?

As a PhD candidate, my priority is to finish the programme by 2013 as planned. However, the more I have worked and spent time with local people, the more I have seen the possibility to encourage community-based conservation and promote friendly routine activities in the forest in the southern TWFC.

After graduation, I will be a lecturer at Mahidol University, Thailand. I will use this opportunity to continue conservation initiatives and activities at this site to promote community-based



conservation through bird conservation clubs using the knowledge and experience gained from researching and writing my dissertation.

In addition to continued conservation initiatives, I will be able to use this study site as an area-base for my prospective students to gain hands-on experiences in community-based conservation initiatives along with field conservation research and conservation education.

I will try to find other funding sources to support local people to continue scouting for hornbill nests as well as to take care of existing hornbill nests (both active and inactive). The park superintendent stated that if this project is successful, he is willing to supply land for a conservation club in MPWS and would like to support and promote community-based ecotourism using hornbills as a flagship species.

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

This work will be published as my dissertation as well as some articles published in international journals.

If funding is available, I will try to write up a self-guide to the birds of the southern Tenasserim Western Forest Complex Corridor using information from my dissertation, and a local curriculum on bird conservation and ecotourism for local conservation clubs or schools.

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

The funding support from RSG is a part of a larger budget needed to complete this dissertation. The funds were used for field activities from May 1st 2011 to May 31st 2012.

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	Actual	Difference	Comments
	Amount	Amount		
Research stipend and compensation	3500	2533.54	+966.46	Because I hired no field assistant since August 2011, the excess funds were used to supplement other categories.
Field equipment	1000	1713.18	-713.18	£1357.52 for 2 radio receivers and external batteries, £96.13 for two- way mobile radios, £98.24 for 2 digital recorders, and £161.29 for 2 antennas.
Field supplies (included gas and food during the field work and interviews, office supplies, and truck	1500	3702.98	-2202.98	£1560.83 for field supplies, £986.09 for food supplies, £205.80 for office supplies, £99.41 for camping supplies, and £850.85 for car maintenance.



Item	Budgeted	Actual	Difference	Comments
	Amount	Amount		
maintenance)				
Total	6000	7949.7	-1949.70	

The actual amount of research stipend and compensation and field supplies shown in the table represented all expenses utilized for those purposes from May 1st 2011 to May 31st 2012. The actual amount of field equipment shown in the table represented only expenses for specific items that were proposed under the RSGF proposal.

I disbursed the excess amount from my personal funds. Later in May 2012, I was reimbursed from the Avian Conservation Fellowship for \$5000 from the Bell Museum of Natural History at University of Minnesota, Twin Cities (the second fellowship).

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

The next steps are to work on data analysis, to prepare dissertation, and to complete PhD by September 2013. If time available, I will draft a self-guide to the birds of the southern TWFC and a local curriculum on bird conservation and ecotourism so that I and my prospective students will have key materials for initiating a bird conservation club. Raising funds for binoculars and spotting scopes as well as for establishing the bird conservation club is also important to realising my plan. Engaging people in the club is also important but can only begin in earnest after the key materials have been prepared.

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 have not used RSGF logo in any materials yet. I will use it in PowerPoint and poster presentations at the university and at conferences, and in my final reports to the Department of National Parks, Plants, and Wildlife Conservation of Thailand, and the Natural History Park initiated by Royal Princess Sirindhorn.

Even though I did not use the RSGF logo, I do mention that RSGF is one source of funding that supported my work in all grant applications/proposals and the progress reports to the Department of National Park, Plants, and Wildlife Conservation of Thailand, and the Natural History Park.

11. Any other comments?

I will submit a final report and a digital copy of my dissertation for your reference after I finish the PhD. I apologise for the delay.