



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	Kinley
Project title	Ecology, people's perception and Conservation status of Rufous-necked Hornbill (<i>Aceros nipalensis</i> , Hodgson 1829) in South-central Bhutan
RSG reference	17369-1
Reporting period	July 2015 to July 2016
Amount of grant	£ 5000
Your email address	sepkin@live.com
Date of this report	18/08/2016

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
Documentation of distribution and preferred habitat of rufous necked hornbill in the study area.			X	A total of 40 plots (observation points) covering transect length of 75.14 km along the existing cattle tracks, footpaths, old logging roads and farm roads had been covered. The habitat components such as vegetation structure, species composition and habitat condition were assessed at the observation points. Rufous-necked hornbill inhabits evergreen warm broadleaved forest with the maximum sighting in the disturbed forests. RNH occurs at an altitude range of 340 to 2100 m asl. The most preferred aspect is south east followed by east during winter however; they have no aspect preference during summer season. During summer season they are seen in everywhere based on the food tree availability. Richer the floral diversity more occurrence of RNH had also been observed
Preferred food trees of rufous necked hornbill			X	Some common food trees of hornbill in south central Bhutan are <i>Beilschmiedia gammieana</i> , <i>Canarium strictum</i> , <i>Castanopsis hystrix</i> , <i>Castanopsis indica</i> , <i>Choerospondias axillaris</i> , <i>Elaeocarpus lanceifolius</i> , <i>Ficus benjamina</i> , <i>Ficus racemosa</i> , <i>Ficus roxburghii</i> , <i>Ficus Benghalensis</i> , <i>Neocinnamomum caudatum</i> , <i>Schima wallichai</i> , <i>Syzygium cumini</i> , <i>Benthamidia capitata</i> , <i>Ficus concinna</i> , <i>Ficus semicordata</i> , <i>Persea fructifera</i> and <i>Prunus padus</i> . Along with the listed fruits feeding on unidentified insects and craps has been observed.

<p>Listing of Conservation Threats of Rufous necked Hornbill in South Central Bhutan</p>			<p>X</p>	<p>With the field observations, threats in the study area have been described. The study resulted 30% of observation plots ($n = 12$) has the presence of common threats such as farm road construction 50% ($n = 6$), electric line 33.33% ($n = 4$) and tree felling 16.66% ($n = 2$) in the study area. The preferred nest tree of Rufous necked hornbill coincides with the timber demand by the local public. Both hornbill and public prefers clean bole and large sized trees. A natural threat like competition for nest and food trees and hornbill as a prey of hawk is also observed.</p>
<p>Production of predicted distribution map Rufous-necked Hornbill Habitat</p>			<p>X</p>	<p>Based on the available data and research findings I am drafting a paper titled "Predicted distribution modeling of Rufous-necked Hornbill in Bhutan" with the use of Arcgis 9.3.1</p>
<p>Documentation of people's perception of hornbill conservation</p>			<p>X</p>	<p>In general maximum of the respondents were not aware of the presence of RNH in their locality. Household interview results showed that out of 168 respondents, 51.7% have not seen the presence of Rufous necked hornbill in their area though the bird lives close proximity to their village. Perception of respondents according to the study sites were not associated; $r(3) = 4.35$, $p > .05$. The level of association is weak (.16) and the strength of the relation is $p > .00$. About 23.21% ($n = 39$) respondents have valued its conservation for ecological role, 19.5% valued of the religious view, 14.29% considered social value and 13.10% valued of its eco-tourism value. However, it is disheartening to know that the maximum group of the respondents 30.36% are not aware of the role taken by hornbill. Therefore, it is deemed crucial to provide educational awareness programme to those residents residing in close proximity to</p>

				<p>RNH habitat, so that the public will access more information about the current conservation status and importance of the bird. Relation of hornbill story and Hindu religion is also documented.</p>
<p>Nesting Habits and breeding season of Rufous necked Hornbill</p>			X	<p>Nesting cycle recorded for the first time in Bhutan which is from 21th March to 19th July with breeding cycle of 115 to 125 days. Earlier I have planned of visiting the nest sites individually but after making visit for a month I couldn't make it as the distance between the nests is too far and moreover its almost 7 hrs walk from nest to nest through rugged terrain. So, I have borrowed four sets of stout camera trap from Department of Forest and Park Services and recorded the daily activity with the help of it and the findings are awesome. There is no nest tree preferred by RNH; they have been nesting based on the availability of nest trees.</p>
<p>Awareness creation on conservation of Rufous necked Hornbill to the local residents</p>			X	<p>Community Awareness Workshop on the theme "Conservation of Hornbill" was organised at different Villages in the study area with the help from other Forestry colleagues. Four forest rangers were hired as resource persons for making the workshop a successful one. The conservation importance and threats to hornbill and conservation strategies were discussed during the campaigns. Most of the workshops carried out for the Community Forest Management Groups as RNH are mostly observed in the CF area. The information dissemination was mostly done through seminars, pamphlets, PowerPoint presentations and public meetings)</p>
<p>Publicity</p>			X	<p>Created a face book web page titled Hornbill Conservation in Bhutan where I feeds it with some important information on hornbill conservation.</p>

				<p>https://www.facebook.com/Hornbill-Conservation-in-Bhutan-846575238794500/, The page will be maintained continuously and the copy of all the scientific papers with be uploaded there.</p>
<p>Printings and publications including dissemination of results(pamphlets , information brochures, journal papers and desertation)</p>		X	<p><i>Fully achieved</i></p>	<p>Submitted a Desertation titled "Distribution Ecology and Conservation Threats of Rufous – necked Hornbill" both in soft and hard copy to CNR lab and WWF Bhutan. Presented my findings at the national level symposium organised by Bhutan Ecological Society at Thimphu, Bhutan. Presented my findings to 33 researchers and faculty of College of Natural resources during the Rufford grant recipient conference at Lobesa in October 2015. Pamphlet about the "Conservation importance of Rufous necked Hornbill" in English language with logos of Rufford small grant were also distributed to the Community Forest Management Group (CFMG), local people and school children to spread awareness among them.</p>
<p>Recommendations from my study</p>			X	<p>Regulate intensity of grazing acceptable in different forest types in relation to availability of fodder and livestock numbers Intensive field investigation must be carried out while issuing forestry/environmental clearances for the up-coming developmental activities Population status of hawks to be studied Community Forest management plan to incorporate hornbill conservation activities Local communities should be involved in monitoring and protection of food tree species, nest and roost sites</p>

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

Having strong support from my department and having provided fund by your good organisation I haven't come across with any difficulties.

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

- o Awareness has been created to the local residents on the conservation importance of hornbills. And as a Community Forest Management planner, I have incorporated hornbill conservation roles of Community Forest members in some of the recently planned CF plan. A facebook page to encourage the young enthusiast and hornbill lovers titled Hornbill Conservation in Bhutan is created. (<https://www.facebook.com/Hornbill-Conservation-in-Bhutan-846575238794500/>). As a result of the facebook page and through my post on facebook of my research updates I got an invitation from Ugyen Wangchuck Institute for Conservation and Environmental Research for collaborative research on hornbills.
- o It was the first study on hornbill in south central Bhutan. Preferred food species, nesting trees, distribution ecology, peoples' perception and conservation threats of RNH is documented. Nesting season of rufous necked hornbill is studied and it's the first study from Bhutan.
- o The lowest nest cavity of RNH (1.8 m from ground) is sighted as a result of this study. The earlier researchers have reported the nest height from 5m to 20 meters above the ground. Drafting of a scientific paper is under way for submission is underway.

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

Many people have been involved for this project as planned. Field rangers, nature enthusiasts, students and local people have contributed as well as benefitted from this project. More than 10 local peoples have been involved as porters during data collection and paid their daily allowance and service charges.

The conservationists and natural enthusiasts are constantly asking for my project update since it has been made known to them through face book that we are working on such a project. The Facebook web page in fact has 428 like as of now

and more responses are to be seen once the copies of journal articles are posted on it.

5. Are there any plans to continue this work?

The successful completion of the current project gives us confidence and encouragement to strengthen the current work in the future.

Our team would like to thank RSGF for funding our important study. We won't stop this work at any point of our life.

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

Drafting of scientific papers are underway for wider publicity. I will be moving forward to present my findings to different government and NGOs during seminars and conferences.

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

The study period for the funds received from Rufford Foundation was for 12 months and fund was exclusively used for project accordingly. In the present study we have successfully completed the project but delayed by 2 weeks for the submission of the final report. Though other objectives has been fulfilled and completed on time, recording the breeding season has delayed for around two weeks as the chicks fledged recently. However, now all the set targets are achieved.

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
Procurement of Digital Camera	900	750	150	
Procurement of Binocular	200	190	10	
Extension kits (tents, rain gear, trekking boots, rucksack, backpack)	600	750	150	

Procurement of GPS(Garmin)	400	200	200	
Printings and publications including dissemination of results(pamphlets, information brochures, journal papers and dissertation) and Stationaries	250	250	0	
Daily allowances for field assistants and meals during field works	1500	1700	200	Expended from excess amount of the above activities
Vehicle rental and maintenance (for entire trip) and Porter/Pony charges	1150	1160	10	Expended from excess amount of the above activities
TOTAL	5000	5000		

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

In our next project we would like to continue our research on the following areas:-

- ✓ The present research concludes that most of the interviewee is not aware of the presence of Rufous necked hornbill in their locality. So, I am planning to produce a documentary on conservation importance of Hornbill in ecosystem, narrating their story with social aspects and distributing the DVD to the local public including the community forest members. Along with a DVD documentary I have plans of making some audio recordings through songs which will be aired in radio program. Moreover, airing of it on the national television channel is deemed necessary.
- ✓ With the advancement of technology, acoustic monitoring of rufous necked hornbill is necessary at the feeding, roosting and nesting sites to study more ecological behaviour of rufous necked hornbill and species associated with it. So, I am planning to carry out acoustic monitoring of Rufous necked hornbill.

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?

- Logo was used in the present projects related publications like symposium, seminars, pamphlets, Power point presentations and during any event of public meetings).
- I personally have shared information on RSG to fellow researchers who are taking up conservation related studies at College of Natural Resources and as of now more than 6 fellow researchers are working on RSG project after my information sharing to the colleagues.
- Logo is promptly displayed in our webpage (<https://www.facebook.com/Hornbill-Conservation-in-Bhutan-846575238794500/>) which is developed to share the research findings to all the peoples of Bhutan and across the globe.
- I will be using the logo during my publications soon

11. Any other comments?

Our team would like to thank RSGF for funding our important study. We won't stop this work at any point of our life and we will continue conservation works on hornbills across the country