

The Rufford Foundation Final Report

Congratulations on the completion of your project that was supported by The Rufford 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	Sonam Yonten
Project title	Influence of Forest Fires on Nest Selection Pattern by White-Bellied Heron along Punatshangchhu Basin under Wangdue Phodrang and Punakha Districts
RSG reference	19201-1
Reporting period	14 th February, 2016 to 13 th February, 2017
Amount of grant	£ 5000
Your email address	sonamyonten86@gmail.com
Date of this report	13 th February, 2017

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
1. To assess the structure and composition of vegetation in the nesting habitat of WBH in once burnt, twice burnt and frequently burnt sites in past 10 years in Punakha and Wangdiphodrang districts.				<p>-Total of eight nesting habitats of WBH were studied in the two districts viz. Punakha and Wangdi Phodrang.</p> <p>-The environmental and climatic conditions were similar for the study sites, therefore the sites were categorised into once burnt, twice burnt and frequently burnt.</p> <p>-Vegetation enumeration was conducted for three layers; tree, shrub and ground.</p>
2. To document the trend of active nesting pattern of WBH in response to fire over the last 10 years in Punakha and Wangdiphodrang districts.				-This trend was well documented using the active nesting data of WBH and fire data of these sites for the last decade.
3. To determine the causes of fire in the nesting habitats of WBH in Punakha and Wangdiphodrang districts.				-The cause of fire is understood from the social survey carried out within the nesting habitats of WBH.

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

Initially project was targeted to understand the impacts of forest fires on the nest habitat selection by the white-bellied heron (WBH). However, due to the limitation of data on the forest fire regimes, which is inclusive of fire frequency, season, extent, intensity and severity, the study therefore had to particularly focus on nesting habitat selection and nest use by WBH in response to forest fire frequency only. The project took off well as I managed to gather data on fire incidence of these regions and nesting data of WBH for the past decade. For the enumeration of vegetation data I proposed to layout of two transects in each nest habitat, but due to the scarcity of

nesting sites of WBH I had to use the modified version of the Breeding Biology Research and Monitoring Database (BBIRD) protocol for vegetation measurement with more transects and sampling units. This aided in generating comprehensive data on vegetation as desired.

As per the project proposal I was supposed to conduct social survey along the whole stretch of Punatshangchu River. But during the survey it was difficult to get the desired information from the inhabitants there as they have not even heard of the bird and its nesting sites. So, finally I have to buffer the area around the nesting habitat of the bird and interview only those people dwelling within the buffer zone. Still I could collect a sizeable data which can be used for analysis.

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

1. Generation of baseline data

This project was the first of its kind in the entire home ranges of WBH to understand the influence of forest fires to the nesting habitat selection behaviour of white-bellied heron. The project revealed the vegetation composition and structure in the nesting habitat of WBH altered due the effects of forest fires. The bird showed a preference for moderately burnt sites than limited or frequently burnt sites. As moderately burnt site is found to offer forest characteristics/traits which comforts their normal activities. Hereafter, any researcher can build on further based on the results generated thus.

2. Roadmap for fire regulation by relevant institutions

The result of this project will assist relevant institutions to formulate regulations/guidelines to monitor the fire incidence in the nesting habitat of WBH. Toward this, more conducive environment can be developed. Hence it will lead to better protection of the nesting habitat of WBH from forest fires and resurrect the declining population of the bird.

3. Education and awareness

Forest fires were perceived to be one of the disturbances to WBH survival. The community lacked the knowledge of how the forest fires influence the nest site selection and nesting behaviour of the bird. This project has helped the community people and other relevant stakeholder understand about the impacts of fires and how they can collectively come forward to mitigate the forest fires in the nesting habitat of WBH. The community seemed committed to give their hands in conservation of this bird and its habitats.

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

The community people were involved in carrying out field reconnaissance surveys, primary and secondary data collection of the project. In the process they were acquainted and educated with the importance of conservation of such species and its habitats in their locality. They were provided with daily subsistence and travel allowances. The community people were also supplied stationeries with the imprints of the bird with conservation messages during the time of awareness and sensitisation campaign.

Foresters, undergraduate students of College of Natural Resources and local heads of the locality were involved right from collection of data till the awareness and sensitisation programmes. They also received the monetary gains and materials out of this project. It created an added sense of awareness and undeniably helped to upscale the impacts of conservation against this project.

5. Are there any plans to continue this work?

The project result revealed that forest fire influences the nesting habitat selection of WBH. But at the same time the influence is coupled with other determinants such as predators and food resource availability. In the process of data collection, the research team found a carcass of an adult WBH, for which the cause of mortality could not be ascertained at the time and it was premised to be due to predators or lack of food source. Accordingly, if given an opportunity I would propose to carry out project with due consideration on stated aspects as it is indispensable to comprehensively understand the nesting habitat selection of the bird.

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

Conservation is a collective endeavour so I have planned to reach out to the maximum lot of academicians and community. I will propose the Royal Society for Protection of Nature (RSPN) and College of Natural Resources (CNR) to kindly catalogue my research projects both in hard and soft copies, so that it becomes a source of reference while undertaking research on this bird. I have presented my findings to the academicians of CNR and will take every available platform to present this research work to any other relevant organisation whenever possible. I will put forth my research paper for publication in the forthcoming issue of scientific journals such as Bhutan Journal of Natural Resources and Development (BJNRD) and Bhutan Ecological Society (BES).

Since I reside in proximity to my study sites I will try to reach out with my findings to those lots which I missed during my awareness and sensitisation campaign programmes.

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

The Rufford Foundation grant was used for the period of 12 months, starting from 14th February, 2016 to 13th February, 2017. The grant was well used and executed at par the proposed timescale of the project.

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
Training of research assistants on survey protocols & Field reconnaissance survey	306	306	0	
Sensitization and awareness	1020	1060.8	- 40.8	Extra 10 participants turned up for the programme
Educational campaign to teachers and students	510	504.9	+5.1	Participants were less by 5 heads
Field surveys and data collection	1606.5	1713.1	-107.1	1 extra field man has to be pooled in due to the rugged terrain
Potter charge	25.5	38.17	-12.67	Slight rise in charge due to the nature of environment
Vehicle hiring charge	300	320	-20	This was due to the inflation of fuel price
Materials for awareness and educational program	600	577	+23	Negotiated the price for some materials
Erection of Banners	300	245	+55	Printed at Printex, so the printing price was slightly cheaper
Payment for report printing	75	75	0	
Media awareness	50	50	0	

Binocular (1 no.)	200	110	+90	Procurement was made directly from India, So could manage to get it at cheaper rate
Total	4993	4999.97		

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

For the effective conservation of WBH and its habitat, first and foremost it is must to identify the underlying causes of disturbances threatening the very species. So the way forward would be to study on major disturbances such as food resource availability and predators. If the issues pertaining to this are addressed at the earliest then it would go a long way in conservation of this species and its habitats. Also the long term studies could materialise only after realising the core issues faced by the bird.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

The Rufford Foundation logo was used in all the educational outreach banners, posters and distributed materials. The logo was also used in all the presentation that I have made so far. The thesis that I have submitted to my college contains the logo as well. RSGF has now emerged as one of the most acclaimed international research grant donor for the new emerging researchers in our country. People are in awe to learn that the Rufford Foundation supports diverse research activities against the conservation of biodiversity throughout the year, while other international donors support annually or biannually with narrowed research category.

11. Any other comments?

Currently, only 60 individuals of WBH are left in its range countries. Therefore, this research will definitely help in its little own way towards the conservation of this bird species and their habitats. Indeed this topic was blessing in disguise for me as I was able to secure the highest marks from forestry department at the College of Natural Resources during the research semester. This would not have been possible without the grant assistance from the Rufford Foundation. Lastly, I would kindly acknowledge and thank the Rufford Foundation for rendering me a generous financial support and look forward to receiving same in not distant future.



**WBH's Nest at Lopokha in
Wangdi Phodrang District**

**Fire evidence in the
habitat of WBH**



**WBH spotted at Tshekhathang in Punakha
District**