

Final Project Evaluation Report

Your Details	
Full Name	Megha Rao
Project Title	Occupancy survey of the globally endangered White-bellied Heron (<i>Ardea insignis</i>) and White-winged Duck (<i>Asarcornis scutulata</i>) in the Brahmaputra River basin
Application ID	23932-1
Grant Amount	£5000
Email Address	megha@ncf-india.org
Date of this Report	31-07-2019

1. 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
To conduct the first systematic distribution survey for the White-bellied Heron (WBH) and the White-winged Duck (WWD) in India.				<p>Across 81 sites, 101.3 km of river stretches were surveyed for the WBH in eight major river basins (seven in Arunachal Pradesh and one in Assam). The WBH was sighted only in one Protected Area (Namdapha Tiger Reserve) of all sites surveyed.</p> <p>Fifty-seven sites were surveyed in Assam and Arunachal Pradesh for the WWD, across six protected areas. The WWD was sighted only in four of these 57 sites. Each site was surveyed on four different occasions to account for the rarity of the species.</p>
Distribution map of the WBH and the WWD through an occupancy framework				<p>Due to the very few sightings of the two species, we were unable to do further analysis with our data to generate the map. However, with the help of experts in the IUCN White-bellied Heron Working Group and the information collected by us, a map was generated that marks probable places to survey for the white-bellied heron in the future, in the north-eastern states of India.</p>
Identification of conservation sites for the WBH and the WWD along the Brahmaputra River basin				<p>Based on our field surveys, Namdapha Tiger Reserve is probably the only site in Arunachal Pradesh that harbours a viable population of the white-bellied heron. We have shared the detailed findings of our surveys with Arunachal Pradesh Forest Department with specific recommendations to monitor and conserve the white-bellied heron.</p> <p>Two sites in Assam were identified as key conservation sites for the white-winged duck; Nameri Tiger Reserve and Dehing-Patkai Wildlife Sanctuary. We sighted up to five WWDs at a time in a pond in Nameri TR. We sighted four individuals across three sightings in Dehing-Patkai WLS, but the FD and the</p>

				locals claim that there is larger population of the WWD in the area. The landscape holds several small and large forest pools and is ideal for the WWD. Based on our field surveys, we will be sending a detailed report to the Assam Forest Department with specific recommendations for monitoring and conservation of this species in these landscapes.
4. To set up a White-bellied Heron and White-winged duck Conservation Club (WWCC) that identifies Local Champions for the two species. To involve members of the local community in generating long-term data for the two species				Even though we were not able to set up an initiative called the WWCC, we did manage to identify some members of the Forest Department staff both in Arunachal Pradesh and Assam, who can act as local guardians. These members of the FD have graciously agreed to provide us information on the respective species found in their site of work and let us know if there are any impending threats to the species. We occasionally get in touch with these people and get updates on the sightings of the species in their respective areas.
5. Engage in awareness programmes with the local communities and the Forest Department staff in relation to the two Endangered species.				Across the states of Arunachal Pradesh and Assam, we have engaged with several communities and the FD staff to provide them with information on the WBH and the WWD. We have interacted with school children too who live in forest villages about the wildlife present around them

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

Obtaining a permit from the Assam Forest Department to conduct fieldwork in the state took much longer than we anticipated. We received the Assam permit only in August 2018 even though we had applied for it in May 2017. Due to this delay, we had to postpone our fieldwork in Assam till after the permit was received.

Initial surveys were mainly conducted using public transport which made it difficult to access certain sites and remote stretches of the rivers. We later managed to hire a motorbike which helped us move around much more easily, however, the initial surveys were slightly hampered due to the lack of access. Since it was a rapid survey, this meant that revisiting many of the locations after acquiring the motorbike was not possible.

While surveying on foot, many of the river stretches deep inside protected areas were not accessible, either on account of being unable to cross or the forest being too dense or without a path. The 101.3 km of river that we did survey were certainly as much as we could have done given the time and accessibility constraints.

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

a). This is one of the first systematic surveys for the white-bellied heron in the Indian Eastern Himalayas. The findings of the survey highlight probable large range depletion of the species in the region. The study also highlights the importance of Namdapha for the conservation of the species in the Indian Eastern Himalaya. Our study has managed to systematically record the anthropogenic variables across the 101.3 km surveyed along the Brahmaputra basin. The anthropogenic variables include fishing, sand and boulder mining, presence of garbage, livestock grazing and signs of construction by the rivers. Two hundred key-informant surveys across 23 localities, fishing was recorded in 22 localities and 16 localities reported positive for destructive methods of fishing. Such prevalent destructive fishing, rampant mining and over 130 proposed dams in the region pose a serious threat to the future of the Brahmaputra River basin.

b). Based on surveys in 57 sites across five protected areas, the forested pools of Nameri Tiger Reserve and Dehing Patkai Wildlife Sanctuary were identified as critical areas for the white-winged duck. The forested pools in Dehing Patkai Wildlife Sanctuary face anthropogenic threats because of fishing and illegal timber collection.

c). Along with the white-bellied heron and white-winged duck, we conducted a systematic survey of all the riverine birds. Based on this study, we found that the riverine bird diversity in sites outside protected areas is similar to inside protected areas highlighting the importance of these stretches for harbouring riverine bird diversity. These riverine stretches are especially vulnerable to hydro-electric power projects. More than 130 hydro-electric projects have been proposed in Arunachal Pradesh which will permanently alter these habitats with potential negative impacts on these riverine birds.

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

We employed 18 members of the local community members as our field assistants during the course of the fieldwork. These members were informed about the two endangered species and were sensitised towards the need for their conservation. One of our field assistants, Bablu Sonwal, has further gone on to work with our organisation, Nature Conservation Foundation, because of his interest in wildlife and his passion towards fieldwork.

5. Are there any plans to continue this work?

We have been working closely with the IUCN White-bellied Heron Specialist Group to develop a study on focussed surveys for the white-bellied heron. We will continue to engage with that group in the future.

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

A manuscript describing the results of this work, focusing on the white-bellied heron, is in review with *Bird Conservation International*. Two other manuscripts are in the process of being sent out to journals. While one focuses on the white-winged duck, another manuscript is on the overall riverine bird diversity in northeast India. Thus, the findings of this study will be shared with the scientific community once the manuscripts get published. We have shared the reports (outlining the findings of the study and specific recommendations) with the Arunachal Pradesh and Assam Forest Departments. Apart from information on the white-bellied heron and white-winged duck, the surveys have also helped generating information on other species from the area. The details of the same can be found below.

The following sums up the ways in which the results from our study have/will be used:

Publications

1. Menzies, R.K., Rao, M. & Naniwadekar, R. 2019. Assessing the Status of the Critically Endangered White-bellied Heron *Ardea insignis* in north-east India. *Bird Conservation International*. In Review.
2. Menzies, R.K., Rao, M. & Kumar, A. 2019. Two new locations for the Black-necked Crane *Grus nigricollis* in Arunachal Pradesh, India. *Forktail*. In Review.
3. Menzies, R.K. & Rao, M. 2019. Eastern Imperial Eagle *Aquila heliaca* at Dibru-Saikhowa National Park, Assam. *Indian Birds*, 15(2), 60-61.
4. Menzies, R.K. & Rao, M. 2018. Common Starling *Sturnus vulgaris* in Anini, Arunachal Pradesh. *Indian Birds*, 14(3), 90.

Conference Presentations

1. Rao, M., Menzies, R.K. & Naniwadekar, R. 2019. Assessing the Status of the Critically Endangered White-bellied Heron *Ardea insignis* in north-east India. Oral Presentation at the Nature Conservation Foundation Annual Meet, Mysore, Karnataka.
2. Menzies, R.K., Rao, M. & Naniwadekar, R. 2019. Distribution Patterns of River Birds in north-east India. Oral Presentation at the Nature Conservation Foundation Annual Meet, Mysore, Karnataka.

3. Rao, M., Menzies, R.K. & Naniwadekar, R. 2018. A study on the riverine birds in Arunachal Pradesh, India. Oral Presentation at the Nature Conservation Foundation Annual Meet, Mysore, Karnataka.
4. Menzies, R.K., Rao, M. & Naniwadekar, R. 2018. Assessing the Status of the Critically Endangered White-bellied Heron *Ardea insignis* in Namdapha Tiger Reserve. Poster Presentation at the Student Conference on Conservation Sciences, Bangalore, India.
5. Rao, M., Menzies, R.K. & Naniwadekar, R. 2018. Oh Dam! A study on the riverine birds of Arunachal Pradesh, India. Poster Presentation at the Student Conference on Conservation Sciences, Bangalore, India.

Awareness Programmes

1. Protecting the Threatened Species of Dehing Patkai Wildlife Sanctuary: The Farmers of the Forest & the State Bird of Assam conducted at the Saraipung L.P. School & Saraipung Forest Village on 23rd November 2018. Organized in collaboration with Department of Zoology, Digboi College & Digboi Forest Division, Digboi.
2. Talk on the Importance of Conservation of the White-bellied Heron and White-winged Duck in Arunachal Pradesh at the Talent Show organized by the Women's Welfare Board of East Kameng at Seppa, Arunachal Pradesh in January 2018.

Workshops & Meetings

1. A Workshop conducted by ATREE Foundation and the IUCN White-bellied Heron Specialist Group on the 'Inspection of aerial imagery to propose priority survey areas for White-bellied Heron *Ardea insignis* in North-east India' held in Guwahati, Assam between 16-18th February 2019.
2. A planning meeting organised by the Wildlife Trust of India, to initiate a long-term recovery project on the White-winged Duck held in Guwahati, Assam on 28th February, 2019.

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

The grant was used from January 2018 till present. This exceeds the expected length of the project. However, an extension was graciously granted by The Rufford Foundation till the end of July 2019.

8. Budget: 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. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Administrative Charges	121	57	-64	
Bus Charges	338	338		
Accommodation	300	231	-69	
Communications	95	58	-37	
Camera x 1	360	342	-18	
Laptop x1	360	348	-12	
Researcher salary (120.5GBP x 2 x 12)	2892	3415	+523	
Binoculars x 1	120		-120	
Field assistant (3.6GBP x 66days)	240	115	-125	
Flights (86GBP x 2 x 2 for Bangalore - Guwahati - Bangalore)	174	161	-13	
Exchange fluctuation gain			+65	
Totals	5000	5065	+65	Conversion rate in the budget is 1GBP = 86.09INR, whereas conversion rate of the actual receipt is 1GBP = 87.22INR

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

White-bellied heron:

- 1) Systematic monitoring programme for the white-bellied heron population and breeding status needs to be initiated in Namdapha Tiger Reserve. The breeding sites in Namdapha need to be systematically identified and need to be protected from potential anthropogenic interference. This needs to be done jointly by the Forest Department, local community members and species experts.
- 2) Given the precarious nature of the species, a conservation breeding programme for the species may be considered to breed and release the birds at potential sites in the region. This needs to be done in coordination with the conservation efforts for the species in Bhutan. This needs to be done

jointly by the Forest Department, local community members and species experts from India and outside.

White-winged duck:

- 1) In Dehing Patkai Wildlife Sanctuary, Forest Department needs to specifically protect the white-winged duck habitats. At several potential sites in the area, we detected several threats like fishing (by draining the lakes) and illegal felling which needs to be stopped.
- 2) Once the anthropogenic threats are controlled, these ponds need to be monitored for the white-winged duck use and occupied ponds need to be strictly protected to ensure long-term persistence of the species in the landscape.
- 3) We were unable to survey potential areas in Nameri Tiger Reserve due to regulations by the Forest Department. Focussed surveys in ponds and small streams need to be carried out across entire Nameri and the adjoining Pakke Tiger Reserve to determine the status of the species in the landscape.
- 4) Habitats in Namdapha Tiger Reserve where the white-winged duck was previously reported (e.g. Ranijheel) have been lost due to accumulation of silt. Efforts need to be initiated to manage the ponds to recreate the habitat which can then be used by the ducks again in the future.

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

The Rufford Foundation logo was used in all publications, oral presentations, official meetings and awareness programmes that are listed in Point no. 6 of this document. We have acknowledged Rufford Small Grants in all the peer-reviewed publications.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Megha Rao and **Rohan K. Menzies** - Conceptualised the study, conducted fieldwork and gathered data for both the White-bellied Heron and the White-winged Duck in Arunachal Pradesh and Assam, along with key-informant surveys. Currently analysing the data and preparing manuscripts.

Rohit Naniwadekar – Helped conceptualise the study, oversaw work progress on and off the field, helped with data collection, provided local community contacts, currently overseeing analysis and manuscript preparation.