

Final Evaluation Report

Your Details	
Full Name	Israt Jahan
Project Title	Ecology and conservation of grassland-dependent avian species in seasonally flooded habitats of Bangladesh
Application ID	24634-1
Grant Amount	£4999
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Date of this Report	

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 quantify the species richness and abundance of birds in two of the largest and least disturbed sites containing seasonally flooded grasslands in Bangladesh				Point counts limited to 100 m radius recorded a total of 75 resident birds at Char Majardia and Char Sakahati combined during 2018-2019. These counts consisted of 382 samples (including replicates) which covered 618.9 ha in total on the two islands. These 75 breeding birds comprised 31 grassland specialists, 34 generalists and 10 waterbirds.
To quantify how key environmental factors, such as flooding patterns, and different forms of human disturbance impact these communities. This study will be conducted in cooperation with local people and protected area staff.				This study investigated the bird community structure and its associations with vegetation characteristics and potential human impacts in seasonal floodplain grassland along the lower Ganges and Brahmaputra Rivers, Bangladesh (part of the Indo-Gangetic Plain) during 2018-2019 through point counts of birds combined with vegetation surveys. Bird responses were assessed by diversity indexes, non-metric multidimensional scaling ordination and linear models. Results show that the total resident bird community (31 grassland specialists, 34 generalists and 10 waterbirds) overlapped among the four major vegetation types in the study area (forbs and bushes, <i>Saccharum</i> sp., <i>Cynodon</i> sp. and cropland). Grassland specialist birds are those adapted to and reliant on some variety of grassland habitat for part or all their life cycle whether feeding or breeding. The diversity of the total bird community increased with cover of forbs and bushes, while the overall diversity of grassland specialists increased with <i>Saccharum</i> sp. cover but decreased

			<p>with increased crop cover. The diversity of the total bird community and all grassland specialist birds showed no variation with vegetation height. However, the abundance of grassland specialists, showed a strong increase with increases in vegetation height. Among the grassland specialists, nine species that were entirely dependent on tall grasses for breeding were considered as obligate tall grass breeders. The abundance of these tall grass breeders increased with <i>Saccharum</i> sp. cover but decreased with <i>Cynodon</i> sp. cover and crop cover. Abundance of obligate tall grass breeders showed a strong increase with taller vegetation indicating that the retention of vegetation with heights >150 cm was likely important to conservation and management of this community. Regular seasonal herding of cattle in these floodplain grasslands was widespread and it was therefore difficult to compare grazed with ungrazed areas, but limited grass harvesting increased the diversity of the grassland specialist bird community. The estimated density of nine species of obligate tall grass breeders ranged from 0.19 – 4.41 birds/ha. Continuing rapid agricultural expansion was observed and is a prominent threat to these birds. More habitat-specific information and monitoring are required to quantify risks and aid conservation planning.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

- 1) Methodology had to change focusing on early monsoon survey only as bird detection was found to be low after breeding season. Hence, instead of non-breeding surveys, the survey was conducted in two replications covering the early monsoon in two consecutive years (2018 and 2019). Point count survey period was also extended to 10h00 as birds were found active in grassland up to 11h00 even in hot temperatures. Without an extend time period it would be

difficult to finish survey in scheduled time (breeding season before floods). In total 185-point counts were completed in 2018 and 197 point counts were completed in 2019 at both sites.

- 2) Vegetation survey method mentioned in initial proposal was changed to minimise survey time. The quadrat method takes a long time, about 45 minutes, for each point. Instead, habitat variables were sampled at every 5m interval from the point count centre up to the 100m radius of the sample point walking in the four main directions (N, S, E, W) using navigator compass. Vegetation species name, average height and water depth were recorded at each 5 m to assess habitat. This method took 25 minutes for each point and was followed for all points in two replications.
- 3) Mist netting was conducted only in Rajshahi but not Kurigram due to logistics problems. However, in total 37days were spent mist netting and 301 birds of 30 species were caught, including 18 of the threatened bristled grassbirds.
- 4) The outreach/education, bird fair was delayed from the proposal timing and occurred on 2nd May 2019 as it took time to fix the school and obtain permission. The chosen school is located near the riverine grassland habitat where most of the people are directly and indirectly dependent on riverine grassland habitat.

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

- 1) In addition to the globally vulnerable bristled grassbird which was found to be breeding commonly in the Rajshahi site and also in the Kurigram site, several rare bird species for Bangladesh were found during our survey. The most notable were grey francolin (rediscovered and breeding in Rajshahi site), which was previously declared as regionally Extinct by IUCN Red List of Bangladesh in 2015 and rain quail was the first confirmed record from Rajshahi. Some other rare species included: common quail, Skyes's nightjar, and streak-throated swallow in Rajshahi; whereas Asian blue quail, grey bellied cuckoo, Amur falcon, Eurasian cuckoo, golden-headed cisticola, Indian spotted eagle, and red-headed falcon were rare records from Kurigram. In total 106 species of birds were recorded (during point count within and beyond 100m) from the two study sites including five globally threatened species (black-headed ibis, painted stork, red-headed falcon, bristled grassbird and Indian spotted eagle) which implies that the study islands could be important reservoirs for grassland birds if managed and conserved properly.
- 2) Nine university students, three forest officials, and six bird photographers were involved and trained in bird survey and mist-netting and ringing, so that research may continue in future effectively. Three local boatman (Nuru, Nazirul and Kalam) involved in the project were trained to identify grassbirds, so that they may work as bird guides as a source of income and also to contribute in future survey.

- 3) Active participation of local people in outreach programmes (bird seminar and bird fair) were amplified awareness of saving grassbirds and their habitat successfully. Our research will be published in an international peer-reviewed academic journal which may raise cognisance more would initiate to save grasslands.

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

Three boatmen participated in our field surveys and received some additional income as assistants and should be able to use their bird skills in guiding visiting birdwatchers to the islands in future as an income source. Two local families directly benefited by hosting the study team - providing meals, accommodation on the islands, and received remuneration. Importantly, these local people were informed about beneficial role of grassland dependent birds and grassland habitat so that they may educate more people in their community.

I visited local communities on both islands to know more about grazing and their regular activities in and use of grassland habitat. Through discussions finally I was able to make them understand the benefit of keeping grassland rather than converting all land to agriculture.

5. Are there any plans to continue this work?

We plan to continue more outreach programmes to raise awareness not only among local people, but also inform the surrounding city people and local university students ultimately to save the riverine grassland habitat. This will be important as local opinion leaders and students can help to share these messages with local officials.

We plan to do more mist netting and ringing in search of rare species, as these methods were found to be as important as point count surveys in revealing rare species and the significance of different grassland habitat for grassland dependent birds.

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

Survey results will be published in an international peer-reviewed academic journal. A proposal to protect the study sites, particularly in Ganges, will be submitted based on result of our research to the government (Forest Department and/or Department of Environment and/or Ministry of Land/other agencies according to the outcomes of discussions with them, since the appropriate type of conservation and sustainable use management, legal instruments and relevant agency are not yet clear.

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

Rufford small grant were used from the beginning of our fieldwork until the end, in terms of time period between April 2018 and July 2019. We extended fieldwork period due to the change in methodology mentioned earlier. This grant covered all costs of our fieldwork including outreach activities. Although the timing of fieldwork was changed, the planned project activities and project budget had been developed with project partners before applying to The Rufford Foundation so we had no problems.

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
Prepare Sample point visiting study sites	£231	£231		
Transportation from Dhaka to Rajshahi and Kurigram	£551	£551		
Travel from Rajshahi city and Kurigram city to study sites by boat	£688	£985	+£297	Travelling cost by boat was higher than we expected.
Accommodation	£1192	£1317	+£125	The rental fees for accommodation were higher than we anticipated.
Food	£1431	£1140	-£291	
Travel, accommodation and food cost for Botanist	£64		-£64	Was able to advise on plant specimens without a visit
Survey materials & stationery:	£101	£101		
Bird Fair and Bird seminar	£459	£485	+£26	Slightly higher than we expected
Bird field guide for local trainee	£6	£6		
Bird rings (metal ring and color-band)	£93		-£93	
Others related to ringing (bamboo, rope, labour	£183	£183		

cost)				
Total	£4999	£4999		Exchange rate (30 April 2018) 1 GBP = 114 BDT (Bangladeshi Taka)

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

Immediate next steps are to protect grassland in part or all of the study islands and other potential riverine floodplains. This is because there is high grazing pressure in some areas, others are converting to crops, and in Kurigram some large landowners are converting tall grasses to tree plantations. Consultations with government agencies and other informed conservationists are needed to find out how best to involve government in supporting conservation while also involving local people and recognising their existing interests.

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?

Rufford Foundation logo was used on the backdrop of our presentation and in the background banner during the series of educative talks. The logo will also be used in every publication from this study.

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

Israt Jahanb– The lead researcher of the project, conducted all fieldwork and outreach activities. She is responsible for the data analysis and also for publications.

Shimul Nath – He was a field assistant and helped with data collection.

Naimul Hasan, Saiful Islam Suzon and Sayed Abu Touab Shakir – They advised to manage logistics and helped to improve community participation.

Nuru - He was the local field assistant, managed logistics and helped with data collection.

Bill Jones – He trained lead researcher and field assistant about mist-netting and ringing.

George A. Gale, Philip D. Round, Paul Thompson and Naruemon Tantipitsanuh – thesis advisory committee, helped conceptualized the study, oversaw work progress on and off the field and are helping with the preparation of the manuscript.

In addition, university students (Hossain Ahmed Tanvir, Sultan Ahmed, Naim Rashid, Sabit Hsaan, Sajib Biswas, Naim Khondokar, Naim Islam, Opu, Arko), Bangladesh Bird club members (Enam UL Haque, Niaz Abdur Rahman, Shafiqur Rahman, Shafiul Alam Manik), Rajshahi Bird Club members (Arif Anam, Murad Parvez and others), Forest

Department officials (Abu Naser Mohsin Hossain, Esika Paul, Jahangir Kabir), Mike Jackson, Firoz Al Sabah volunteered to help our project several times during survey, mist-netting and education program.

12. Any other comments?

No final comment yet.

Floodplain grassland habitat structure along the lower Ganges River
(Drone camera photos taken by Firoz Al Sabah in July 2019)



Floodplain grassland at lower Ganges River, Bangladesh



Grass patches in floodplain grassland at lower Ganges River, Bangladesh



Tall grass patches mixed with other vegetation cover at Char Majardia along Ganges River



Grassland converting to paddy field at Char Majardia



Grassland converting to paddy field at Char Majardia



Flood water was slowly covering grassland of Char Majardia at the end of July 2019

Vegetation structure at floodplain grassland



Saccharum sp. are mostly tall upto 3m



Cynodon sp. are very short in general about 0-0.25m.



Paddy, Jute and maize cultivation



Jute cultivation observed increasing clearing grasses and fellow paddy field was used several birds for foraging

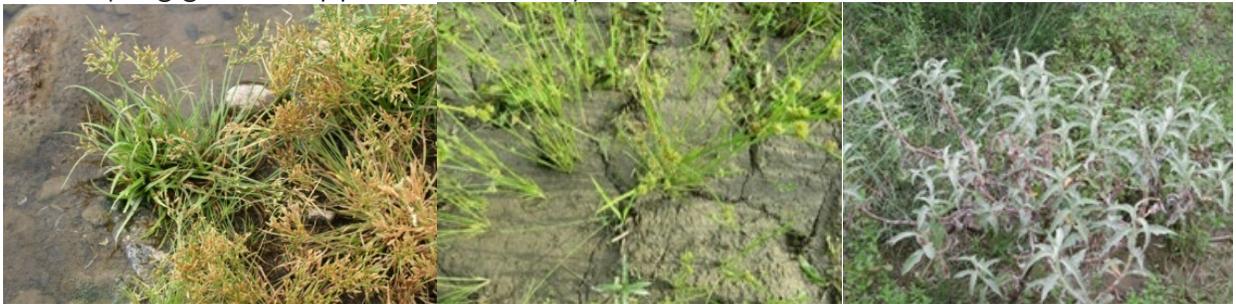
Forbs and other Bushes



Sparse *Tamarisk sp.* height up to 5m, *Ipomoea carnea* (Morning glory-bush) height up to 5m. Both plants are invasive here.



Calotropis gigantea, *Lippia nodiflora*, *Physalis minima*



Fimbristylis bisumbellata, *Cyperus sp.*, *Persicaria hydropiper*



Senna tora, *Centella asiatica*, *Colocasia esculenta*



Solanum linnaeanum and *Solanum nigrum* was found in scattered observed Grey Francolin using it to hide at Char Majardia, Rajshahi; *Parthenium hysterophorus* observed growing fast between year in at Char Majardia, Rajshahi

Birds at floodplain grassland

 <p>A small bird with a yellow crown and black breastband, perched on a green stem.</p>	 <p>A brown bird with long, thin tail streamers, perched on a green stem.</p>	 <p>A small brown bird with a golden-yellow head, perched on a green leaf.</p>	 <p>A small bird with a red head and black and white body, perched on a green stem.</p>
<p>Black-breasted Weaver</p>	<p>Bristled Grassbird</p>	<p>Golden-headed Cisticola</p>	<p>Red Avadavat</p>
 <p>A small brown bird with a long tail, perched on a green stem.</p>	 <p>A small brown bird with a long tail, perched on a green stem.</p>	 <p>A brown bird with a long tail, perched on a brown stem.</p>	 <p>A small bird with a black head and white body, perched on a green stem.</p>
<p>Graceful Prinia</p>	<p>Plain Prinia</p>	<p>Striated Babbler</p>	<p>White-tailed Stonechat</p>
 <p>A brown bird with long tail streamers, perched on a green stem.</p>	 <p>A brown bird with a crest, perched on a brown stem.</p>	 <p>A brown bird with a crest, perched on a brown stem.</p>	 <p>A small brown bird with a long tail, perched on a green stem.</p>
<p>Striated Grassbird</p>	<p>Oriental Skylark</p>	<p>Bengal Bush Lark</p>	<p>Paddy Field Pipit</p>



Indian Thick-knee



Lesser Coucal



Rain Quail



Grey Francolin



Grey-throated Martin



Zitting Cisticola



Watercock



Jacobin Cuckoo (Pied Cuckoo)

Fig.Grassland Specialist birds



Baya Weaver



Plaintive Cuckoo



Grey-bellied Cuckoo



Bank Myna



Green Bee-eater



Little Pratincole



Western Dove Spotted Dove



Eurasian Dove Collared Dove



Barn Swallow



Barn Swallow



Sykes's Nightjar



Asian Openbill



Painted Stork



Bluethroat



Eurasian Cuckoo

 <p>Short-eared Owl</p>	 <p>Black-winged Kite</p>	 <p>White-eyed Buzzard</p>	 <p>Common kestrel</p>	 <p>Indian Spotted Eagle</p>
	 <p>Amur Falcon</p>	 <p>River Lapwing</p>		

Fig. Bird recoded during study period



Baya weaver nest



Red Wattlebird nest



Indian thick-knee nest at Rajahshi on 10 June 2019



Black-breasted Weaver nest



Paddy Field Pipit nest at Char Majardia on 11 June 2019



Striated Babbler nest in Kurigram on 23 May to 28 May 2019



Plain Prinia Nest

Human disturbance at floodplain grassland



Widespread grazing occurs during no flood from October to June



Early grass harvesting observed in March was negatively affect bird breeding season (March-June)



Poisoning grassroots and unmanaged burning observed to prepare grasslands for crop cultivation



Regular cutting of *Tamarisk sp.* and *Ipomoea carnea* even during bird breeding season, hindering territorial birds to find a branch to perch on, local people use it for fuel

Field work photos



Conservation education program





For outreach and education, a bird seminar was arranged in Rajshahi on 12th May 2018. Rajshahi Bird Club member, local university students, school children, bird photographers, bird watchers, forest department officials and local officials were attended in the seminar. Professor Dr. George Andrew Gale, Professor Philip David Round and Dr. Paul Thompson were given speech about bird conservation.

Bird Fair





Art Competition





A small bird conservation program was arranged in Char Nobinagar Government Primary School, Majardia char, Rajshahi on May 2, 2019. Bird photo exhibition, bird talk and art competition were organized in this program. Survey team and forest department officials were introducing bird conservation and the benefits of grasslands habitat to local people. Local people actively participated in the bird quiz and school children participated in the bird art competition. At the end of the program, Dr. George Gale, Professor, King Mongkut's University of Technology Thonburi, Thailand and Abu Naser Mohsanin, Director of Crime control Unit, Bangladesh Forest Department were given prizes to winners.