

## Final Project Evaluation Report

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Your Details	
<b>Full Name</b>	Gaurav Vashistha
<b>Project Title</b>	Population studies of Critically endangered Gharial <i>Gavialis gangeticus</i> in Katarniaghat wildlife sanctuary, Uttar Pradesh, India
<b>Application ID</b>	24452-2
<b>Grant Amount</b>	£5000
<b>Email Address</b>	Gaurav.vashistha91@gmail.com
<b>Date of this Report</b>	12.04.2019

**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
Population count of Gharial in Girwa river, Katarniaghat				Girwa River is connected to Kaudiyala River which has a faster water flow rate and depth. Gharials are migratory species in terms of dispersal during breeding period and setting up a territory. We have a complete count only for the targeted Girwa River.
Nesting sites and Number of nest				It's the most exhaustively completed part of the project. We have detailed information on nesting sites, number of nests, hatching rates and mortalities including predation.
Sample collection for Molecular work				We have samples for three continuous breeding seasons (2016-18). There are only 18 reported markers for the gharials but their application is still inefficient as they are not very informative. There is a constant lack of exclusion power in the markers. We are focussing on identifying best markers and to increase both sampling size and markers. However it is a time taking process.
Awareness				Communication is a key part of awareness and poor literacy rates are an obstacle to efficient awareness work.

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

1. Weather: Natural factors such as weather are the most unpredictable difficulties during field work. January-February are the best time for population counts, however irregular rains during all of January and February resulted in very cold and foggy days alternating with rains. Both the situations were

unfavourable for basking animals and us as the visibility becomes very poor. This resulted in spending excessive time on population counts.

2. Lack of a personal boat: We were provided with a 30HP petrol boat by the Department of Forest, for use in our surveys. The boat hit a technical snag during a survey and the repair work took almost 2 months as the replacement component had a part which was imported from Japan. The department took care of the repair but we were left with a hand rowing boat.

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

1. During our work on nesting behaviour (March, 2018), we found that vegetation is a potent threat to habitat destruction in our field site. It was mainly due to poor natural flow in the river. We set up a preliminary experiment and found it to be a major cause of poor success rates in nests at sites with vegetation. This finding was included in the latest IUCN Red List assessment for gharials. Gaurav Vashistha is one of the reviewers in the assessment and vegetation has been mentioned as an issue in Katarniaghat.
2. Our work and data resulted in a dialogue with the concerned forest department and they sanctioned a budgeted vegetation clearing activity under the supervision of Gaurav Vashistha and team. An estimated area of 30000 m<sup>2</sup> was cleared using tractor and labourers following a weed removal protocol. Previous nesting sites which have been taken over by vegetation were chosen for clearance as gharial shows nesting site fidelity.
3. Our interaction with locals informed us that there has been no compensation in cases of crocodile-human conflicts. As per the law, the victim's body needs to be recovered for compensation but most cases in crocodile-human conflicts takes place near water bodies and usually crocodile drags the victim into the water. Lack of compensation in these cases didn't give rise to negative attitude in locals. They understood the importance of the crocodiles in water and believed that they themselves need to be cautious when around water bodies with crocodiles.

### **4. Briefly describe the involvement of local communities and how they have benefited from the project.**

As per our work ethics, all our support staff during the project (Including boatmen, cook, drivers, field assistant and local communication person) were the eligible persons from local villages near the gharial habitat. These support staff both extends our network of awareness and are benefitted by the income generated working for the project.

During our awareness activities, the local support staff acts as a bridge between us and the local villagers who are both illiterate and speaks a different dialect. These areas have very low income source and options and our associating local people for our project acts as a two-way channel where they receive monetary benefits and we have an extended network of information providers.

We always train our support staff in use of basic field equipments such as camera, camera traps, GPS, binoculars etc. So whenever another researcher comes to work in our field location, we recommend the persons who have worked with us, know about collection of field data and use of basic equipments. This way they have an option to work and earn.

**5. Are there any plans to continue this work?**

Yes, the project outcomes are important for conservation of gharial as well as associated aquatic flora and fauna. We have executed our first management intervention in January-March, 2019 and we will follow its efficiency till nest nesting season. Secondly, we are still left with lot to learn in Katarniaghat where we will focus on mating behaviour, inter season gene flow and migration of gharials along the Girwa-Kaudiyala river system in the next project.

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

Our work has already been shared with the concerned forest department which has resulted in sanctioning of a large scale management plan. Our next step is publishing our work in peer reviewed journals as well present our work at conferences.

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

Our project was sanctioned March 2018. We used it from March to June, 2018, and January to March, 2019. The grant was used in the actual planned length of the project.

**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
Fuel	1040	990	-50	Reduced fuel consumption during boat repair
Equipment	1490	1510	+20	Increased courier charges
Food	731	810	+79	Increased stay during bad weather and repair of motor boat, One extra boatman during boat repair to assist in data

				collection.
Travel	928	928		
Community awareness	700	700		
Contingency	111	111		
<b>Total</b>	<b>5000</b>	<b>5049</b>	<b>+49</b>	1 pound sterling= INR 91.4235

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

1. There is a need for continuous management intervention in the Girwa River for nesting of gharial and other threatened aquatic reptiles. The vegetation is rapidly taking over the sandy areas, optimal nesting sites, which will ultimately result in reduced nesting as well as migration of gharials to Kaudiyala River which itself is disturbed due to illegal fishing.
2. Most important is to maintain the natural flow of the river. However due to a barrage downstream, the river has a regulated, altered flow rate. This has resulted in exponential silt deposition in upper parts of Girwa near India-Nepal border which has reduced both the depth and flow of the river. What can be done is a huge scale de-siltation of Girwa at the India-Nepal border. It will increase the optimal habitat, increase depth of the river and provide a flow rate to overcome the vegetation threat. But being a part of protected area and in vicinity to international border, this activity requires clearances from various state and central ministries which is a complex and time taking process.

**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?**

Yes, we used the Rufford Foundation logo in our awareness programs. It was used in the information brochure that we have developed and are in process of registering for International Standard Serial Number (ISSN).

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

**Gaurav Vashista:** He was the team lead and supervised the complete project. He has designed the field surveys and experiments and communicated to the stakeholders on behalf of the team. He has been part of all the data collections and coordinates with the all the associated agencies such as the department of forest.

**Dr. David Kothamasi:** He is supervising the lab based molecular work.

**Satyam Arya:** He has assisted in the data collection during the population count and documenting the work.

**James & Nabarun:** They have assisted during data collection during different intervals in the project.





