

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	Ashutosh Tripathi
Project title	Spatial ecology of Indian narrow-headed softshell turtle (<i>C. indica</i>) near Yamuna-Chambal confluence, Uttar Pradesh, India
RSG reference	21937-1
Reporting period	December 2017 to October 2018
Amount of grant	£5000
Your email address	Ashutosh_tcp@live.com
Date of this report	2 November 2018

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 seasonal movement patterns, home range, and habitat utilization pattern of wild <i>Chitra</i> .				Please refer to comment 1
Provide data on important species specific habitat for conservation managers to evaluate and implement conservation action such as habitat restoration, captive breeding and reintroduction.				Preliminary information on <i>Chitra</i> specific habitat has been presented at "16th Annual Symposium on the Conservation and Biology of Tortoises and Freshwater Turtles in Fort worth, Texas" and submitted to the forest department and conservation managers. Information was shared at the Rufford India Conference on 18-21 September 2018 in Goa.
Capacity building of Forest frontline staff and School teachers for upper primary schools along National Chambal Sanctuary.				<p>A capacity building programme for the forest department frontline staff was conducted on turtle research and conservation, marking of turtles (temporary and permanent), nest protection for Chambal turtles, community dealing for conservation issues and survey techniques.</p> <p>Cluster based approach to educate and aware the schools kids, a teacher's training programme (TTP) for the upper primary schools teachers was successfully conducted along the downstream of National Chambal Sanctuary near the study site. In this programme 25 teachers were trained to educate schools students towards turtles and river conservation. After this a school's follow-up programme was started in 25 selected schools to evaluate the success of the TTP.</p> <p>A stakeholder workshop was conducted near Chambal-Yamuna confluence, in which 22 village chiefs participated to discuss threats to the</p>

				river ecosystem and mitigation through conservation linked livelihood alternatives.
--	--	--	--	---

Comment -1 Documentation of seasonal movement patterns, home range, and habitat utilization pattern of wild *Chitra*:

Seasonal activity:

During the winter season, normal activities consisted of animal settlement near the exposed mid-river sand islands or in shallow water during the day and little movement during the night. During the summer, continuous movement was observed day and night. During the night, animals were observed close to the river bank and island. It was observed that animals kept changing their location on a daily basis within the range of 1 to 6 km during winter and summer.

Radio-tagged *Chitra* exhibited individually distinct patterns ranged from residency at a single location (59 at Katrauli) to wide-ranging movements upstream as well as downstream, by a *Chitra* (36 at Sahson). There was no significant difference observed between winter and summer season. The maximum/minimum home range of the radio-tagged animals was 6/1 km during winter and 7/1 km during summer. The movement observed was more frequent among the transplanted turtles. Movement observed frequent and repeated in male as compare to female within its home range.

Seasonal trends of turtle during winter and summer:

Chitra showed unclear seasonal patterns of upstream and downstream residency. During winter season, only transplanted male ID-36 moved upstream and resided there throughout winter, while during summer the animal shifted upstream from its primary residency and was observed frequently moving between primary and secondary residency. Another turtle, ID-50 a resident female, moved downstream and shifted 2 km down from Chambal-Yamuna confluence and spent winter season nearby primary residency. Whereas during summer, this animal shifted downstream near Dharpura in Yamuna River and never returned to primary residency.

The rest of other turtles mostly showed their primary residency up and down stream (observed shifting between primary and secondary residency throughout winter and summer).

Distance trends:

Among four tagged *Chitra* (41, 57 resident female and 36 transplanted male and 51 transplanted female) at Palighar, three residents had their primary residency at Palighar whereas 36 transplanted male shifted toward upstream at Kundol. Between two tagged *Chitra* (59 resident sub-adult and 50 resident female), 59 shifted 2 km upstream and had primary residency at Katrauli, whereas 50 female shifted ~10 km downstream and had primary residency at Asewa. All tagged animals werwe observed nearby their primary residency throughout winter season.

Two transplanted turtles (36 and 51) had their secondary residency upstream at Barchauli ~10 km from primary residency, whereas among four residents, two *Chitra* (50 and 57) shifted upstream and had secondary residency near Dharpura and Sahson respectively ~5 km distance from primary residency.

The mean maximum distance location for the six monitored *Chitra* was 9.7 km, ranging from 2.2 – 16.6 km. The total recorded movements for six radio-tagged turtles showed individual variation ranging from 23.3 – 73.8 km with an average of 37.7 km. Transit patterns typically involved a series of short movements between specific locations for 1-2 days and as long as a week. For example, 36 shifted in late March from Kundol to Barchauli, a river distance of ~10 km, in 1-2 days and 51 shifted during mid-March from Khera to Barchauli in a week.

Transmitter ambient temperatures for 36 transplant male recorded average 13.4 °C ranged from 1.5- 22.2 °C during winter and average 25.2 °C ranged from 20.8 – 29.4 °C in summer. Whereas for 50 resident female it was recorded mean =14.4, ranged 7.5 to 24.5 °C in winter, and average 25.6 °C, ranged from 20.2-29.5 °C in summer.

Movement pattern between class size and sex:

It was observed that females (50, 41, 57 and 51) shifted primary residency to secondary residency from winter to summer, residing there throughout the season with local movement within a range of 0.5 to 1 km, whereas a single male turtle shifted at secondary residency and moved more frequently from pool to pool between primary and secondary residency, over longer distances (>5 km) than any of the tracked females. Movement in adult is as longer as >11 km and a single sub-adult movement were restricted within a Katrauli pool ~ 1.5 km range throughout winter and summer.

Poster presented in 16th Annual Symposium on the Conservation and Biology of Tortoises and Freshwater Turtles in Fort worth, Texas"

https://www.academia.edu/38200857/Chasing_Chambal_Chitra_spatial_ecology_and_seasonal_activities

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

a) In acquired permission in protected area: It took 9 months to be granted, applied on 20 February 2017, granted on 8 November 2017.

b) Delivery of radio transmitters: Next difficulty we faced is to order and delivery of radio-transmitter, which took at least 3 months from order to delivery. Due to this, we had to complete the tagging process in two attempts (in November 2017 and May 2018).

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

1) Each *Chitra* displayed its own individual spatial preference for specific areas of the river stretch,

2) Activity and home range of the species varied individually and seasonally among tagged *Chitra*.

3) There is no definite direction of movements (UPSTR and DOWNSTR) in winter and summer among all tagged *Chitra*.

4) The movement pattern among sex and class size varied in tagged *Chitra* individuals.

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

For this study, I hired four persons from fishermen community as catching crew for tagging the *Chitra* and later selected two (Anand and Kausal) among them for assisting me in tracking the animal. They were able to earn an income from this project, but also gained a lot experience in assisting research work. Additionally, they helped me in community awareness programme. This way, this project helps to reconstruct their mind towards conservation and research and conveyed a message in their community towards adopting conservation linked livelihood alternative.

5. Are there any plans to continue this work?

I intend to continue my work in the region since the study results to date are limited because: 1) the presented data is of two season i.e. winter and summer only; and 2) less number of male individual (only one ID-36).

The future steps are to collect more data within lower section of Chambal River by tagging more adults *Chitra* individuals (males and females) by using more efficient UHF/GPS radio transmitter.

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

We are under preparation of a manuscript for a peer reviewed journal and I am hoping to publish our findings early 2019. I am also looking forward to presenting my research again at the 17th Annual Symposium on the Conservation and Biology of Tortoises and Freshwater Turtles.

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 project was delayed 2 months due to permission, granted by forest department, and field work is continued till October 2018.

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
Wages to catching crew	600	700	+100	Purchasing of radio transmitter could me managed in two slots, 2 times hiring of catching crew were increased the amount.
Salary of tracker (n=2)	1000	1000		
Radio transmitters	1500	1500		
Travel and transportation	750	900	+150	Due to regular monitoring the main cost increased for bike fuel.
Base camp	250	100	-150	Later we shifted to the forest department campus where luckily we got a room on request to operate the field work.
Hire and purchase	900	800	-100	Some of the equipment was sourced from Gharial ecology project of Madras Crocodile Bank Trust
Total	5000	5000	0	Exchange rate 1GBP = 83.79 INR

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

I feel two important tasks need to be done. Firstly, there is need to collect more data on species spatial ecology and habitat specific characteristic to provide a scientific input in conservation actions.

Secondly, there is need for an education center for the villagers and fishermen community to educate them for conservation and a resource center to provide various skill and support through government scheme for alternate livelihood.

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

The Rufford Foundation logo was used in all correspondence for this project. This included the advert for volunteers, emails, letters of undertaking, the questionnaire surveys, PowerPoint presentations etc.

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

Prof Jeffrey W. Lang	Project supervisor
Anand Kumar	Catching crew team member and field assistant/tracker
Kausal	Catching crew team member and field assistant/tracker
Prahlad	Catching crew team member
Santosh	Catching crew team member

12. Any other comments?

I am very grateful to the Rufford Foundation for providing support to study the spatial ecology of this endangered species. Thank you for giving us the opportunity to study this less studied animal which is gradually losing its existence on earth. I hope to receive similar support for my future endeavours.