

Final Evaluation Report

Your Details	
Full Name	Durga Prasad Srivastava
Project Title	Living Along the Carnivores: Identifying and Promoting the Co-Existence Approach of Carnivore Conservation in Urban Landscape of Bhopal, Vindhyan Range, India
Application ID	26903-1
Grant Amount	£ 5000
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Date of this Report	February 2022

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
The tiger movement will be surveyed, and grid occupancy will prioritize the areas of focus.				We have documented tiger presence in city limits and continuously monitored green spaces where tiger movement is frequent.
To reduce the negative interactions stakeholders should be aware and sensitized to accept the co-existence approach. Local Eco-development committee/Van Samities will be strengthened and will be trained in the monitoring of wildlife around the villages and settlements which can be used to design strategies to decrease human-wildlife interactions.				Local EDC and Van Samities are inactive since 2016. 20 informal discussions with village herders and forest staff. During discussions we got to know financial assistance is major factor which can promote their involvement in monitoring green spaces. In conversation with a college group, we are setting up a citizen science initiative and volunteers will be trained and monitor the neighbouring green space near their houses.
Education and awareness activities will be carried out in schools in the corridor area to sensitize the students with co-existence approach of conservation.				10 government schools five more school camps have been organised. Trailers of "The Secret life of Bhopal Tigers" launched on 26 th January 2022. Full documentary will be released in March 2022. https://youtu.be/N12KdRZcxZE
Documentation of local strategies and practice of Human-Tiger interactions and develop a manual/Toolkit of co-existence. The				People are adapted with tiger presence.
trained people who individually can monitor wildlife and pre-inform forest department before any predation or negative interactions				Local EDC and Van Samities are inactive since 2016 300 ground staff of forest department were trained. 25 city volunteers were trained. Citizen science initiative to monitor

happen.				green spaces has been initiated but not functional as of now.
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

Travel Related: During fieldwork the major difficulty is harsh weather, tough terrain and field surveys on the bike. We had support from Rainmatter Foundation and Leo Foundation to buy second-hand four-wheeler.

Man-power Support: As the study area is near a city, local communities are getting good wages. We need more budget for manpower for local communities as well as for interns from different universities. Local university students are not active for intense field works.

We are now planning to bring university students for dissertations and long-term internships from outside Bhopal.

Unplanned Assistance to Forest Department: Some unplanned tiger rescues, tiger monitoring and field training take a lot of field time. Supporting these activities however built trust and closeness with forest officials and ground staff.

Loss and Damage of Equipment: During the field work camera traps and bike being damaged by few nuisance people. We installed camera traps in iron boxes and locked them but even these are not working in area where slums are nearby. We need to buy 4G network-based camera traps so that data will not loss.

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

- **Tiger Presence Map:** Mapping tiger presence in Bhopal-Ratapani Corridor (proposed work) and tiger presence was also mapped around the 30 km limit of city limits (extended works). We have documented frequent tiger movement in city limits also.
- **Capacity Building Workshops:** Capacity building workshops with the forest department and city volunteers. Our team was also involved in training, field support and data collection during All India Tiger Estimation 2022 for Bhopal, Sehore, Obedullahganj Division, Singhori WLS and Ratapani Wildlife Sanctuary. Around 300 field staff of adjoining forest divisions were trained multiple times and supported.
- **Collaborations:** Collaborations with Samavesh (Bhopal based NGO), Aranya Lok Nyas (Bhopal based NGO), Tinsa Ecological Foundation (Bhopal based NGO) and Leo Foundation (Netherlands). Samavesh, Aranya Lok Nyas and Tinsa will support as develop a citizen network for regular monitoring and Leo Foundation is supporting us as advisor.

Collaboration and field testing for new developed mobile application CLUEY by Sensing Clues, Netherlands

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

- Local villagers who are working as daily waged labourers with forest department have helped us by assisting us on forest trails. In turn, we have been supporting them with very small stipend or basic things such as shoes, torch or jacket based on their requirement.
- Few of these daily wagers were also involved during the capacity-building workshop and involved with local villagers to update on tiger movement information.
- Local schools were involved in awareness and educational activities
- Initiated citizen science initiative to document different aspects of biodiversity of Bhopal city but it is still not fully functional yet. Trained one batch of volunteers to document different aspects of biodiversity in urban green spaces

5. Are there any plans to continue this work?

- The findings of the project highlight that the city offers the first and unique opportunity to develop an understanding of how tigers are surviving in the urban landscape without involved in any conflict with people.
- The results show around Bhopal are tiger habitat areas and continued research on a different aspect of tiger survival will give the first scientific assessment of tiger conservation near the city.
- The next plan is to assess the spatio-temporal assessment of space use by carnivores, people and prey base in the urban landscape of Bhopal. This will help us to understand the segregations and overlaps in the city landscapes for better understanding, management and conservation.
- We have documented six tigers which are frequent to city areas (one dominant female, one dominant male, two sub-adult tigers, and two cubs). Understanding their movement behaviour and timely information will ease our management. We are now planning to raise some funds and collaborate with organisations for radio-telemetry on urban tigers.

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

- One of the communications on the spatial presence of tigers in different parts of green spaces of Bhopal is ready to be published. It got delayed due to extended work we are carrying forward in outer limits.
- The aspects of this research study and the role of different stakeholders in managing the landscape and tigers are planned to be documented in a small documentary which is scheduled to release on 21st March 2022.

- The results will be combined with the other aspects of the PhD research to answer main research question “Can tigers survive in urban landscapes of India?”
- The results will be shared with Forest Department and urban planners for consideration of green spaces for tiger conservation as well as urban planning

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

The project “being funded by Rufford Foundation (2019-20) is part of long-term PhD research work (2019-2023) to assess the potential of tiger survival near Bhopal city. The other part of the study “Camera Trapping and Diet of tigers and Human-tiger interactions” is supported by MP State Biodiversity Board, Bhopal (2019-2021).

The whole PhD research has a budget of around £30000 in the said period. Current funding from Rufford was used for the first seasonal study of tiger presence and conservation activities in the landscape.

We are expecting continuous support from the Rufford Foundation on the project to assess the Spatio-temporal use of these green spaces by people, carnivores and prey base and radio-telemetry studies.

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
Contingency Cost	150	119	-31	
Awareness Cost	385	50	-335	
Subsistence payments for the local team	1570	1290	-280	The payment was given according to the work
Field Equipment	1700	1701	+1	
Field expenditure	650	1105	+445	A base camp was rented in Bhopal city which was used by all team members (not considered in initial budgeting)
Fuel and Transportation	545	735	+190	Bike rent and maintenance was not considered in the

				initial budget
TOTAL	5000	5000		
Remark: First Instalment of Small Grant from MP State Biodiversity Board was used to buy 10 more Camera traps.				

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

- Developing a scientific understanding of space use by carnivores and people through extending the research on spatio-temporal space use.
- Citizen science initiative to document the urban biodiversity and carnivore presence in different parts of Bhopal city (City parks, green belts, low residential areas, adjoining forests, etc.).
- Capacity building and support ground staff of the forest department, citizens (students and general people) who can support citizen science initiatives, and awareness of school students.

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?

- All formal presentations on the research work.
- The logo is being used in awareness activities and capacity building workshops.
- The work progress report submitted to Wildlife Institute of India and MP Forest Department have Rufford Foundation logo and acknowledgment.
- Web blog of Sensing Clues, Netherlands
<https://www.sensingclues.nl/news/living-with-tigers>
- Our website: www.urbantigers.org

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

Names	Role	Duration
Dr BS Adhikari , Scientist F, Wildlife Institute of India, Dehradun Dr Shekhar Kolipaka , Board Member, Leo Foundation, Netherlands	Supervisor	
DP Srivastava	Principal Investigator	
Gaurav Uppal Rakshita Sah (Non-Paid)	Field Assistant	Feb-Nov 2019 Dec 2019-Jan 2020
Sushil Sharma Mehul Singh Tomar	Intern	1-3 Months

Shakti Kumar (2 years) Mukul Sneha Singh		
Utsav Tiwari Amit Kumar Ankit Sinha Sumit Rajat Pandit Ayush Bisen	Volunteers	

12. Any other comments?

We would like to thank The Rufford Foundation, MP State Biodiversity Board, Bhopal, MP Forest Department and Sensing Clues, the Netherlands for supporting the study in various capacities.



Picture 1: Monitoring large carnivores with forest officials in urban landscape



Above) Tracking Injured tiger in forest area for rescue. Below) Team installing camera traps in forest areas.



Injured tiger with snare wire and tiger captured without snare wire.





Capacity Building workshop of ground staff of Bhopal Forest Circle.





Capacity building workshop of urban enthusiasts



School Awareness Program





1/19/2020 12:37 PM DP



1/29/2020 6:38 AM DP

Use of green spaces by people, prey-base and Tigers



8/13/2019 11:06 AM D 



8/13/2019 12:05 PM D 



Use of space by carnivore, people and cattle





Urban Green Spaces of Bhopal



Interaction with local communities

CAMERA TRAP LOCATIONS (BHOPAL-SEHORE)

