

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	Vikram Aditya
Project title	Assessing the impacts of hunting and illegal trade on wildlife in the northern Eastern Ghats, focusing on the Indian pangolin
RSG reference	25277-1
Reporting period	1 st July 2018 to 1 st July 2019
Amount of grant	£5000
Your email address	vikram.aditya@atree.org
Date of this report	15 th July 2019

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
Assessing pangolin presence and distribution in the Northern Eastern Ghats landscape				Due to the rarity of the species, even after extensive field surveys and camera trapping, only one potential image of the pangolin was directly captured during the project period. However, there was significant secondary evidence of pangolin presence across the landscape was recorded from scales of hunted pangolins. One captured pangolin was rescued and released along with the Forest Department. We conducted an online survey to assess and map the distribution of pangolins across India, as well as to assess the threats from hunting and illegal trade facing the pangolin
Assess the impact of hunting on wildlife with a focus on pangolins				

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

None.

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

1. We have so far published three articles based on our Rufford funded project thus far, one in Mongabay, one in Current Conservation, a conservation magazine, and in PA update, an Indian monthly newsletter on conservation focusing on protected areas. One scientific article has already been accepted for publication in *Oryx* and another is under preparation. Another paper on the occurrence of the honey badger *Mellivora capensis* from the landscape has been submitted to the journal JoTT for publication.

2. We interviewed 60 respondents from three different tribal groups from 30 villages spread across the northern Eastern Ghats to study hunting practises and its impacts on pangolins in the Eastern Ghats.

3. We have conducted an online survey on pangolin distribution from December 2018 to April 2019. The objective of this survey was to assess and map the distribution of the Indian pangolin across the country, as well as to assess the threats from hunting and illegal trade. The survey has garnered 126 responses so far. The results are being analysed.

4. We have helped in the rescue and release of an Indian pangolin confiscated from poachers, with the Andhra Pradesh Forest Department. We have also recorded several pangolin scales (figures attached).

5. Through this project, 18 species of mammals were recorded from the northern Eastern Ghats through camera trap images. This includes the first record of the honey badger *Mellivora capensis* from the landscape. A paper has been written and has been submitted to the journal JoTT for publication.

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

The involvement of the local communities has been central to this project. A number of local (some photos attached) youth have been engaged in the project since the beginning. The field assistant employed for the project is a local Koya tribal youth from the same village as the field base. A number of other young people were also involved in assisting in the project as volunteers, from helping to set up camera traps to translating in community interviews. They have also had their capacities built as they have learnt to use technology used in wildlife studies such as camera traps, GPS etc. In addition, a few of them are conversant in English now. A significant amount of the data on pangolins and hunting camera from interviews with local communities, who primarily belong to the Konda Reddy and Koya tribal communities. These communities are scattered across various RFs of the northern Eastern Ghats in Andhra Pradesh. Nearly all village respondents interviewed correctly and easily identified the pangolin when shown photos.

5. Are there any plans to continue this work?

This project supported by the Rufford Foundation enabled us to build a baseline of information on the potential presence of the Indian pangolin in the northern Eastern Ghats landscape of India. It enabled us to understand how hunting is affecting the pangolin and other species. We were also able to get a glimpse of the clandestine local and regional trade networks in the landscape that is affecting the pangolin. We aim to continue this work over the next few years and have already received funding support to continue the project for the next year. We have also built a network of contacts in several villages in the landscape, as well as with the local staff of the Forest Department. We have applied for permits to continue the work for the next 2 years from the Andhra Pradesh Forest Department. Through this project, we have discovered that there is relatively higher hunting and trade of pangolins and other wildlife in Odisha, particularly the districts of Malkanagiri and Koraput bordering the northern Eastern Ghats districts of Andhra Pradesh. Therefore, we wish

to expand this study to Odisha. We are in the process of applying for permits in Odisha.

We have already published one general article on the pangolin based partially on the learnings from this project in Telugu. We have submitted an article based on the finding of this study to *Current Conservation*, an Indian science and conservation related magazine, and it has been accepted.

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

We have submitted one article from our Rufford supported project and earlier work based on the results of the project integrating local community knowledge and our field surveys to assess the status of the pangolin in the northern Eastern Ghats. This article has been accepted in *Oryx* and will likely be published within the next 2 months. We are planning to submit the next article based on the results of our nationwide online survey on pangolin occurrence and mapping of threats in a conservation journal, most likely *Biological Conservation*.

We have already published a popular article in *Current Conservation*, an Indian conservation magazine. The article is titled 'How the cyber revolution is fuelling wildlife poaching in India: the story of the pangolin'.

<https://www.currentconservation.org/issues/how-the-cyber-revolution-is-fueling-wildlife-poaching-in-india-the-story-of-the-pangolin/>

We have also published an article in Mongabay based on our earlier study and partly based on our ongoing Rufford project.

<https://india.mongabay.com/2019/02/commentary-scale-of-the-issue-the-indian-pangolin-is-losing-ground-in-the-northern-eastern-ghats/>

We also publish a newsletter from ATREE on the Eastern Ghats called Manyam focusing particularly on conservation challenges in the northern Eastern Ghats landscape. We will be covering the project in upcoming issues of Manyam.

We have presented the project findings in the Rufford India conference in February 2019 and in the ATREE Annual Work Seminar 2019.

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 Rufford grant was used for a period of 1 year. This matches the anticipated length of the project.

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
Field/Local transport 9 months	996	337	-659	Actual travel cost was lower than anticipated
Outstation transport 10 months	443	217	-226	Actual travel cost was lower than anticipated because I travelled mostly by train, and was able to get cheaper flight tickets
Field station maintenance expenses 10 months	443	432	-11	
Research associate 10 months - actual 12 months	1991	2336	+345	Salary was provided for 12 months because of the duration of the project
Field assistant's remuneration 9 months - actual 12 months	597	1038	+441	It was decided to increase the field assistant remuneration as he felt 6000 a month was too low. We increased it to 8000 a month and paid him for 12 months.
Field research equipment	530	334	-196	The cost of the camera traps was saved as we were given four Cuddeback camera traps by the AP Forest Department. The expenses incurred were mainly for the camera batteries and SD cards
Bank fees		268	+268	
Total	5000	4962	-38	(actual amount credited was INR 4731.75 on 20 July 2018)

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

This grant from the Rufford Foundation has enabled us to build a baseline of information on the potential occurrence of the Indian pangolin in the northern Eastern Ghats landscape of India, and to understand how hunting practices and trade by local communities affect the pangolin and other wildlife. The work that we have been doing has also allowed us to build a strong network of contacts in the region, from local communities and NGOs to Forest Department staff and other

government officials. We aim to continue this work over the next few years and have already received funding support to continue the project for the next year. We have understood that there is greater hunting pressure and trade of pangolins and other wildlife in Odisha, particularly the districts of Malkanagiri and Koraput bordering the NEG districts of Andhra Pradesh. Therefore, we are expanding this study to these two districts of Odisha.

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?

We have used the Rufford Foundation logo in brochures that we produced for disseminating information about the species. We have also acknowledged the support provided by Rufford in our articles.

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

Dr. Vikram Aditya, postdoctoral researcher, ATREE - Has an M.Sc. in Zoology and a PhD in conservation science and sustainability studies. He has experience with research methods for mammal surveys including camera trapping, sign surveying, landscape ecology and GIS. Has worked in NEG for 10 years.

Dr. T. Ganesh, Senior Fellow, ATREE - Has a PhD in ecology and works on plant-animal interactions, long-term ecological monitoring and forest ecology. He has coordinated several ecological research projects in the Eastern Ghats as well as across India in varied landscapes.

Mr. Aravind Turram – A local tribal youth, has good knowledge of the landscape, the local dialect and is familiar with conducting field surveys. He will work as field assistant.

Mr. Yogesh Pasul – an intern with the project.

12. Any other comments?

We are including below some figures from the project of pangolin scales (Figure 1 and 2), a pangolin successfully rescued and released with the Forest Department that our team assisted in (Figure 3), camera trap images captured during the course of the project (Figures 4 to 11) and project staff and volunteers scouting potential pangolin burrows and setting up camera traps (Figures 12-14). We are also including a few results from the online survey on pangolins that we undertook.



Figure 1 and 2: Scales of pangolins hunted in the local area



Figure 3: A pangolin successfully rescued and released by the project team in cooperation with the Andhra Pradesh Forest Department



Figure 4-7: Camera trap images of a few carnivores captured during the course of the project, clockwise 4) Grey mongoose, 5) Honey badger recorded for the first time, 6) Leopard cat, 7) Ruddy mongoose





Figure 8-11: Camera trap images of a few herbivores captured during the course of the project, clockwise 8) Sambar, 9) Indian muntjac, 10) Indian wild pig, 11) Four horned antelope



Figure 12: Project staff Aravind Turram scouting a potential pangolin burrow



Figure 13-14: Project staff Aravind Turram and volunteer Mahesh setting up camera traps near potential pangolin burrows

Online survey on pangolins:

We conducted an online questionnaire survey to assess the distribution and threats facing pangolins in India. The questionnaire survey comprised of 19 questions that elicited information from respondents, about sightings of pangolins directly observed, location, age/size class of pangolin species seen, their habitat, number of sightings and changes in sightings over the years, hunting attempts observed on pangolins and nature of attack, parties involved in the hunt, tools and strategies used, and the location of hunts and frequency. Respondents were also asked about threats facing pangolins and measures that could be initiated for captive breeding. Participants were requested to provide their gender, age (grouped into categories), and educational background. The survey was conducted from November 2018 till April 2019, a period of about 6 months.

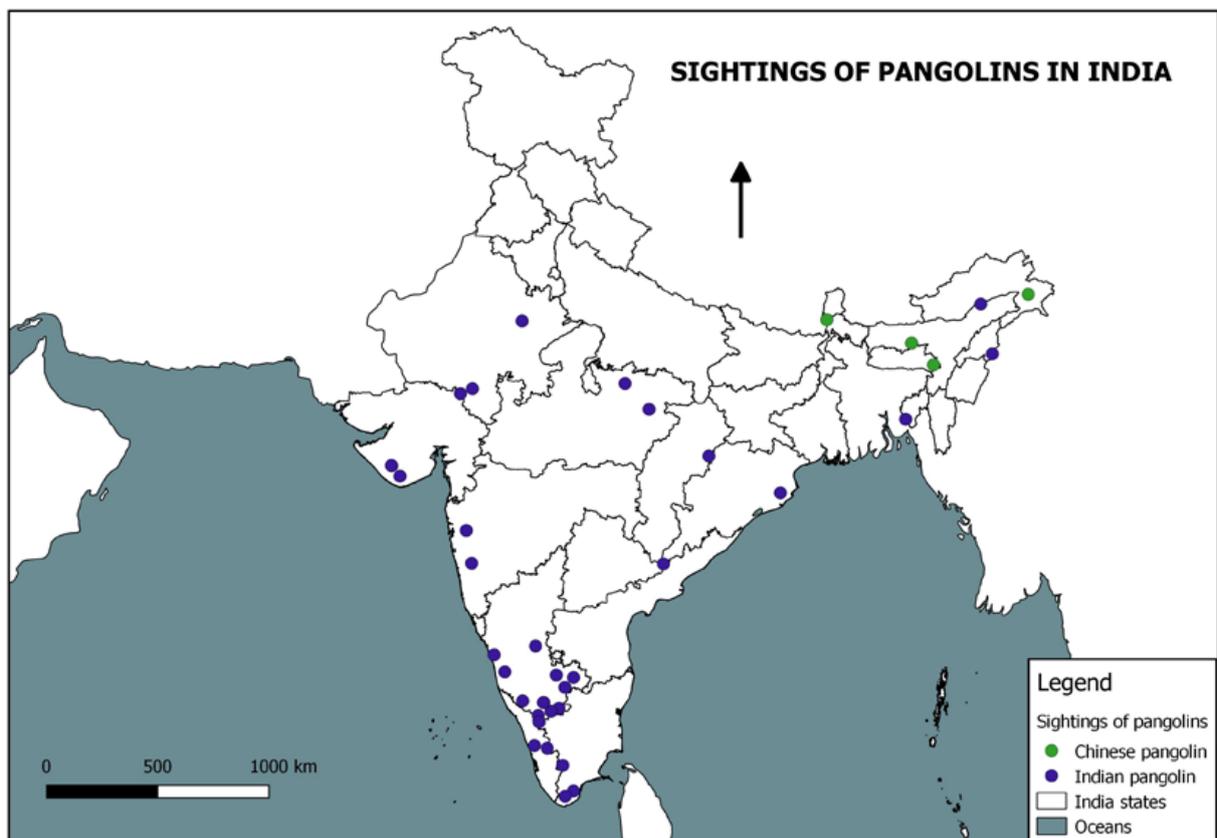


Figure 15: Sightings of pangolins across India

38 sightings of the Indian and Chinese pangolin were reported from 16 states across India, indicating the large geographic distribution of the two species, but were most concentrated in the Western Ghats (Indian pangolin) and the northeast (Chinese pangolin) (Figure 15). A majority were found in forested habitats, but were also reported from plantations, villages and urban areas. Results suggested that dry deciduous forests were the most preferred habitat for pangolins across India, followed by other forest types such as moist deciduous, evergreen and scrub forests. Hunting of pangolins was reported from across India. Pangolin hunting was largely reported from village lands, but also occurred in protected areas, reserve forests, roads and village lands.

A statistical analysis of patterns of pangolin distribution and hunting patterns across the country was carried out using the R statistical platform. Although there was no significant habitat selection ($X^2 = 12.361$, $df = 8$, $p\text{-value} = 0.1358$), Indian pangolins seemed to have a slight preference for dry deciduous forests over other habitat types. There was no significant pattern in species preferred for hunting and both Indian and Chinese pangolins were hunted ($X^2 = 0.17557$, $df = 1$, $p\text{-value} = 0.6752$) (Figure 16).

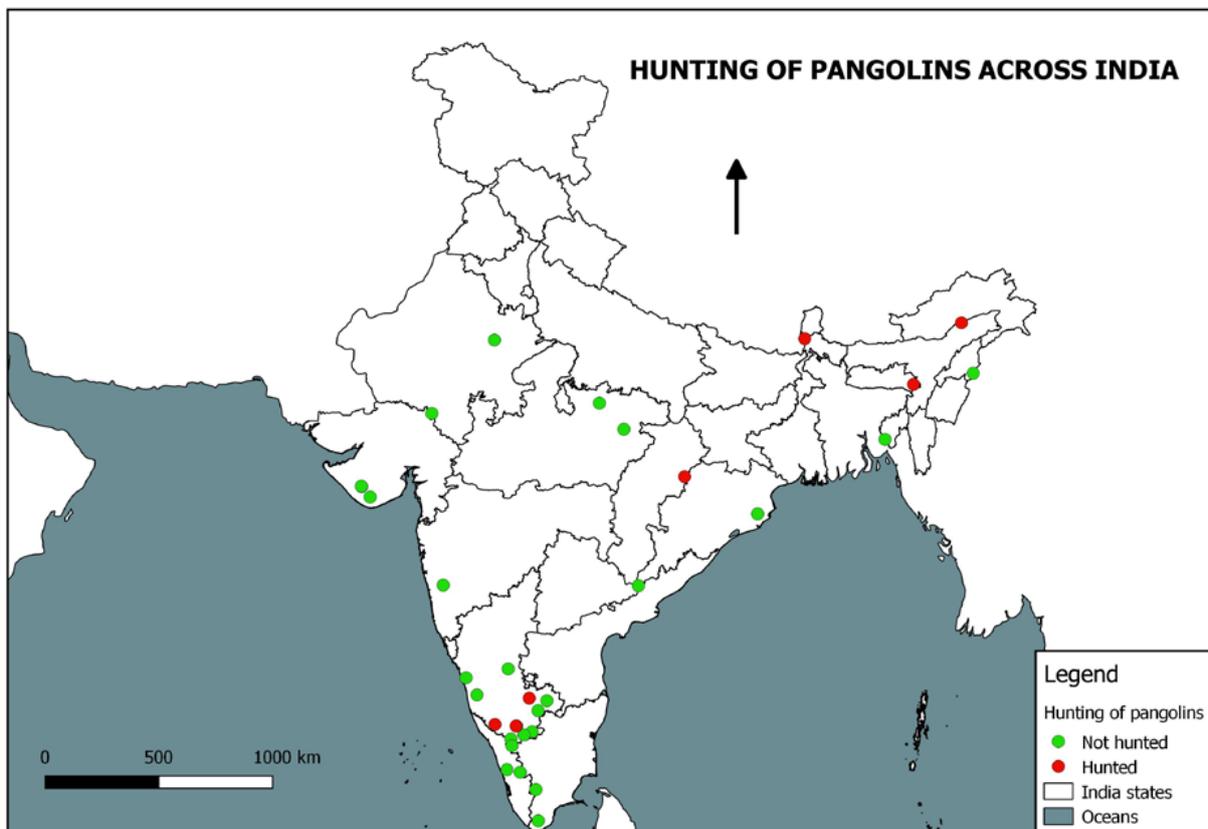


Figure 16: Sightings of pangolins across India