

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 | Jayanta Kumar Roy |
| Project title | Effect of Forest management on amphibians as indicator to ecosystem health in Lower Dibang Valley, Arunachal Pradesh, India. |
| RSG reference | 15997-1 |
| Reporting period | April 2015 to August 2015. |
| Amount of grant | £4990 |
| Your email address | roy.jayantakumar47@gmail.com |
| Date of this report | 20 th December 2015 |

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 |
|--|--------------|--------------------|----------------|--|
| Amphibian survey | | | √ | <p>We conducted amphibian survey altitude from 250 m to 2656 m asl covering different forested and stream habitat. We recorded 32 anuran species and among these most species identification was not confirmed. We have a new state record <i>Nanorana (Paa) chayuensis</i> from Arunachal Pradesh and one vulnerable <i>Theloderma moloch</i> endemic in Northeast India recorded after the original description Annandale in 1912.</p> |
| Association between amphibian occurrence and forest management practices | | | √ | <p>We collected data on human disturbances into different category types influencing amphibian distribution in the area. We estimated the area of encroachment (human settlement; cultivation land) by using GPS and Google Earth followed by using Earth point for calculating polygon area (http://www.earthpoint.us). We conducted our study in different community reserve forests and some areas come under Mehao Wildlife Sanctuary. We found significant relationship between amphibian occurrence and protection measures or management of forest in community reserve areas and forests come under protected area. We found those areas came directly under protected area enjoys less protection with low species richness and diversity than community reserve areas protected by the owners themselves. We estimated higher percentage of disturbances of different category types faced from Ejengo (study</p> |

| | | | |
|--|--|---|---|
| | | | <p>site) came under Mehao Wildlife Sanctuary (MWLS). However, no activity of Jhumming recorded from Ejengo, since it came under MWLS. However, the community reserve forests were protected with limited disturbances. In community reserve forest areas, only the owners themselves have the rights to use the area for different purposes which was lack in protected areas.</p> |
| <p>Awareness among local community for amphibian conservation.</p> | | √ | <p>The Idu-Mishmis were the major indigenous community inhabiting in the area from foothills onwards in Lower Dibang Valley, Arunachal Pradesh. During the study period, we explored new areas and tried to established conservation network among the local communities. We visited each individual community leader's houses from every study sites (if any). We interacted with the local community leaders from different areas; keeping every information from them and tried to give an idea to the importance of amphibians in the area. We organised preliminary community meeting in two villages. We involved young people directly into the project from the local community to generate interest on amphibian conservation by direct participation.</p> |

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

Being a part of Eastern Himalaya, the study area has continuous raining and foggy weather during monsoon (May-August); peaked valleys, loose soil, tall thick and closed canopy cover. In the study area, most survey sites located far from our base camp (5 km or more). Considering the situation, we camped for 10 to 15 days continuously in different forested and stream habitat. The main difficulties faced during the study period was to convince local community leaders to get permission for the amphibian survey followed by tough and often risky field survey in different forested and stream habitats located at different valleys.

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

- Checklist of 32 anuran species recorded for the first time from Lower Dibang Valley Arunachal Pradesh India.
- New state record of *Nanorana (Paa) chayuensis* from Arunachal Pradesh, India and first record of *Theleoderma moloch*, a rare amphibian, after its original description by Annandale in 1912. We are in the process to describe unidentified species encountered and these will be our important outcomes of the project.
- The overall project work and findings will be published in peer reviewed journals.

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

We involved two local community people daily basis; trained to handle GPS and documenting field data. This helped them to conceive or to get involved into several project works started in the area. During the project, we ensured the medical allowances for the two selected community volunteers.

5. Are there any plans to continue this work?

The present study gathered baseline information collected for the amphibian distribution and conservation status only from Lower Dibang Valley of Arunachal Pradesh. However, it is important to monitor and establish a strong conservation network in a large landscape level. Thus, we formulated new objectives with standardized methodologies for the landscape (250 m to 3568 m or above). This is essential and will be our first priority to document amphibians from the area (unexplored) prior the establishment of proposed 3000 mW dam construction in the same area submerging diverse habitats for amphibians and other wildlife species survival.

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

The results of this project will be made available in the form of research paper in peer review journals and also a technical report to the stakeholders, University library and professors.

Activities of the project were presented at different regional natural orientation programmes and meetings.

A poster for the project activity was presented in Indo-French Workshop, CCMB, Hyderabad.

We planned to keep all the relevant information in the district directory of Roing, Lower Dibang Valley, Arunachal Pradesh.

However, final technical report will be shared with Rufford Small Grant Foundation to make it available on public domain.

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 fieldwork ran from April 2015 to August 2015.

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 |
|------------------------------------|-----------------|---------------|------------|--|
| Allowance for community volunteers | 840 | 950 | -110 | We hired additional volunteers for the field survey considering site locations. |
| Travel | 1100 | 1100 | 0 | |
| Accommodation | 180 | 255 | -75 | We rented a permanent house during project work followed by visit at different areas. |
| Telecommunication | 240 | 110 | 130 | Our study area situated at very backward place with poor telecommunication network; thus we saved the cost for other expenditures during field survey. |
| Food | 1200 | 1300 | -100 | The difference in the budgeted and actual amount for food was due to addition in the number of field members during survey period (mentioned above). |
| Equipment | 550 | 800 | -250 | A good quality DSLR camera was important for good quality photographs and better documentation. |
| Awareness and conservation | 650 | 240 | 410 | We saved the money for other expenditure. |
| Field stationary | 240 | 240 | 0 | |
| Total | 5000 | 4995 | 5 | |

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

Considering rapid habitat degradation followed by forest fragmentation and decline in forest connectivity, it is important to plan protective measures through sustainable forest

management practices for community reserve forests and make forest officials aware by sharing relevant information mentioned above.

- Understanding the ecology and distribution pattern in tropical ecosystems for amphibian will be our prime objective in near future.
- Assist in assessing the threats to the tropical first order streams contributing essential benefits into the watershed areas at down streams.
- Contribute towards future conservation and management of amphibian species and their habitats.

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

The logo of RSGF was displayed in all power point presentations and poster "Amphibian Survey, Dibang Valley". We will acknowledge RSGF in our all peer reviewed scientific publications and technical report.

11. Any other comments?

Thanks to Rufford Small Grant Foundation for the financial support. Arunachal Pradesh Forest Department for the necessary permission. I am thankful to my supervisor Dr R. H. Begum, Department of Life Science and Bioinformatics, Assam University Diphu Campus. And Dr M. Firoz Ahmed for necessary suggestions and literature help. I am thankful to Aaranyak for in-kind support with the logistic and technical support. For taxonomic suggestions, literature help, methodology preparation and valuable advice by Dr Abhijit Das, Dr K. Vasudevan, Prof Sushil K. Dutta and Prof Annemarie Ohler to execute this project. Special thanks to all community leaders at Lower Dibang Valley; Jibi Pulu, Zila Mithi for providing local guidance at Roing; Gapo Miuli and Regon Menda field assistants/local guidance during field survey. Thanks to Ahi Mehu, Anish, Athugo, Igni Meme, Girdi, Asobe, Indo, Heman (Boma), Hindu Meme, Aba Pulu, Rasup Tayu, Durga Tayu, MK Tayu and those unknown persons helped during the survey period, Lower Dibang Valley, Arunachal Pradesh.