

The Rufford Small Grants Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants 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	Krishnakumar Krishnakaimal
Project title	Impact of Invasive Alien Species (IAS) in Periyar Lake-stream system (PLSS), an irreplaceable site for freshwater fish conservation in the Western Ghats Hotspot-India
RSG reference	10811-1
Reporting period	1 st May 2012- 31 August 2013
Amount of grant	£6000
Your email address	kkagua@gmail.com , kk_agua@hotmail.com
Date of this report	26 th September 2013

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
Database on distribution, population and status of alien fish species inside the PLSS including their possible impact on six globally threatened and endemic fishes.			X	A detailed map showing the distribution of alien fishes in PLSS is prepared. Information boards were prepared for these alien fishes. It was found out that <i>Clarias gariepinus</i> has completely eliminated the native fishes from a canal that drains into the lake and as an immediate evasive action a campaign was organised to remove the exotics from the canal.
Gather local knowledge and perceptions on the distribution of alien fish species in the region and on their possible threats on endemics.		X		The tribes had little information on the spread of exotics as they are not allowed to fish from the core areas of the tiger reserve. Apart from the core areas the data shared by the tribals matched the experimental data.
Participation of local communities and wildlife managers to assist in field work would in turn support livelihoods and enhance knowledge and capacity.			X	They were appraised regarding importance of the project and the need for their involvement and assistance. The fishers showed willingness to participate in the project and assured help with data collection. The support given by the tribals and the local forest department was vital for the success of the project especially the "African Catfish removal campaign". The grant success of the event was the cumulative effort of the project team and the stakeholders.
To develop a management plan for alien species in PLSS.			X	A management plan was developed to remove the exotic fishes from PLSS, by selective removal of exotic fishes using baited fyke nets by trained members of the local community.

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. Estimated the distribution, abundance, population and possible impact of alien species in PLSS and developed a management plan for the conservation of threatened endemic fishes of the Western Ghats especially in irreplaceable sites like the PLSS.
2. A unique participatory campaign was organised in April 2013 to eradicate *Clarias gariepinus*, the most notorious alien species in the Periyar Lake, which resulted in the capture of 92 individuals ranging in size from 190mm to 425mm.
3. The project helped to build a strong rapport with the tribal communities which will be beneficial in implementing long term management plans.

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

Local communities acted as the vital link that helped in the successful implementation of the project, especially the field work and the African Catfish Removal Campaign. Local fishers were involved at all stages of the project from initial workshop (attended by the King of Local Tribal Groups), fieldwork and the final workshop. Through this, the fishers have received honorarium as well as capacitated to coordinate/participate in the conduct of future field surveys and research on fisheries in the study region.

5. Are there any plans to continue this work?

Yes, the project team looks forward to continue this significant work on the alien fishes in PLSS in the Western Ghats by implementing the management plan developed by the project to remove exotic fishes. The project team is currently planning to carry out scoping studies in the study region as well as interacting with local governments and state forest department to develop a proposal for carrying out the management plan. The project leader is also looking forward to submit a second Rufford Grant proposal to take up this work.

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

A detailed project report is being prepared. Copies of this report will be submitted to the state Fisheries and Wildlife Departments; Ministry of Environment and Forest of the Government of India, and WWF-India. An electronic copy of this report will also be posted on the website of the Rufford Small Grants Foundation.

A manuscript on impact of invasive alien species in Periyar Lake-stream system will be prepared and communicated for publication in peer reviewed journals.

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

1st May 2012- 31 August 2013

The project was scheduled to start in May 2012 and end in June 2013 (14 months as mentioned in the proposal). However there was a delay of 2 months, due to heavy monsoon in the project site (September 1st 2013) before the project could actually be completed.

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
Initial discussion and informal gathering of ~30 Participants	300	300	0	
Gill net, cast net, drag net, seine nets and other accessories for fishing	200	200	0	
Digital weighing balance field use	150	150	0	
Chemicals (formaldehyde, alcohol) for fixing and storing	100	150	+50	There was an increase in the price of chemicals.
Tags, polythene covers, storage vials and bottles	150	100	-50	Reuse of the vials and covers helped in reducing the cost.
Raincoats, waders, boots, camping kits	300	300	0	
Travel expense	2000	2100	+100	There was a considerable increase in the fuel expenses which increased the cost
Honorarium for helpers drawn from local communities for assisting in data Collection	1000	1050	0	
Meals and accommodation	1200	1400	+200	An increase in Luxury tax for hotels resulted in the increase
Final workshop including stakeholders	400	400	0	
Report including publicity and outreach materials	200	200	0	
Total	6000	6300	300	1 £ -80 Indian Rs

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

Three alien species *Oreochromis mossambicus*, *Cyprinus carpio*, and *Clarias gariepinus*, have already established large populations in the PTR. Effective management of these three alien species is therefore vital for managing the last remaining populations of the six globally threatened fishes. Among this effective removal of *Clarias gariepinus* is vital because it was accessed as the major threat to the fish fauna of PLSS. Efforts will be undertaken to carryout remove the former from PLSS as early as possible. A conservation strategy integrated with the park's management plan must be immediately enforced for promoting freshwater fish conservation.

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

RSG logo was used in all the publicity and outreach materials including T shirts designed for the African Catfish Removal Program, also in the information boards designed to be kept in Periyar Tiger Reserve. The African Catfish Campaign was widely covered in visual and print media in Kerala. A special article appeared in the newsletter of IUCN SSC/WI Freshwater Fish Specialist Group (FFSG).

11. Any other comments?

Two manuscripts were published during the course of the project and Rufford Small Grant is acknowledged. Several manuscripts are under preparation including few new species to science discovered as part of the field work.