

Final Evaluation Report

Your Details	
Full Name	Nayantara Jain
Project Title	Harnessing the growing recreational diver community in India for coral reef monitoring: enabling adaptive management of coral ecosystems in the Andaman Islands
Application ID	19553-1
Grant Amount	£4880
Email Address	Nayantara@reefwatchindia.org
Date of this Report	08-01-2019

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
Identify indicator species of fish and invertebrates of the Andaman Islands				This was done through research and consulting with marine biologists and experts both domestic and international.
Identify the best protocol for underwater coral reef surveys to be easily done by recreational divers				By consulting with dive instructors and marine biologists, we narrowed down the data collection protocol for fish, invertebrates and coral. This was a fixed 100 m swim for fish followed by 2 x 2 m quadrats for invertebrates and a photo quadrat for coral/benthic substratum.
Creation of dive slates and a text book to teach the protocol to recreational divers.				Materials attached.
Marking fixed sites for transects and quadrats in Havelock Island, Chidiyatapu and Neil Island.				We were able to fix sites for Havelock (the island with the most dive centres in the Andaman's) and Chidiyatapu but it was not possible in Neil as the only operational dive centre there shut down.
Training dive instructors to teach the coral monitoring program to interested recreational divers.				Rather than do this as two main workshops we worked with instructors from individual dive centres at their base. This made it easier to take respective instructors to the sites they were more likely to visit from their bases.
Creation of an online database to store the results				Rather than an online database, we are still maintaining soft copy databases. We have not found a software solution where this database can easily be updated with the poor internet we have on the islands. However, we hope to have a solution soon and we are working with an app developer to help with this.

<p>Launching the program and supporting dive centres in initial stages</p>			<p>We have had divers take part in the programme on both Havelock Island and Chidiyatapu and worked closely with the instructors teaching the monitoring course. Based upon suggestions from them and feedback from the divers we have made certain edits to the book and the tests and will be introducing the edits in the next print of the book.</p>
<p>Using the data generated to support conservation efforts in the Andaman Islands</p>			<p>This is looking promising; however, we still do not have enough data points to be able to use it to guide conservation and management. In time, with more people doing the course, we hope this will change.</p>

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

Just after we began the project, the Andaman & Nicobar administration banned boat diving for a period of about 8-9 months. This was a huge hiccup in our programme as there is barely any shore diving in the Andamans and certainly no sites good enough for certified divers – the target group of our project. This led to a big pause in the project and we had nothing to do but create all the materials and wait for the lifting of the boat ban. Even after the ban was lifted, there were many problems with the boats and many dive sites were out of the range of the new restrictions. This led to a big drop in certified divers visiting the islands and therefore the amount of people that undertook the course.

Another problem was the difficulty in marking fixed sites for the transects and quadrats. We struggled with finding a method that withstood waves, storms and other movement and at the same time did not damage the study site. We overcame this problem by using a semi-permanent method of weights and nylon wire coupled with GPS markings that were also shared with dive centres. We used volunteer instructors from different dive centres to replace the markings to the correct place in case of movement.

The final problem was that of making an online portal that could be uploaded and accessed from the islands. We are working on currently with an app developer this issue.

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

- The ACE Diver monitoring protocol book. This book is a useful text for divers who are interested in doing the program and talks a lot about the coral reef ecology of the Andaman Islands. Such a book did not exist before this one.
- Getting the Indian Navy dive team on the islands to conduct our surveys in areas that are not accessible to civilian divers.

- Setting up the framework of a monitoring protocol that does not require marine biologists and grants to maintain.

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

This project was aimed towards recreational diver communities – tourists from mainland India who visit the islands on vacation – not at local communities per se.

5. Are there any plans to continue this work?

Yes, we will continue the project as it will be largely self sufficient as we move forward. We are also planning to turn the ACE diver book into an app that divers that download, go through and then upload their data on, as this will make the information easier to collate and more user friendly.

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

Once we have more data points collected and an online database we will provide it to local authorities as well as open it up to local college and university students to use as a basis for their own research and papers.

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

The grant was used over 2 years. We had anticipated it to be used over 1 year but due to the boat, diving ban mentioned earlier we had to delay some parts of the project.

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
Miscellaneous	250			This was also diverted towards the app creation.
Web developer cost for data portal	102	50	+52	We did not complete this, as it was not working. The excess funds have been re-directed towards making an app-based solution.
Workshop cost for	153			

teachers training				
Publicity material for the course: Printing	191	196	-5	
Publicity material for the course: Design	102	102		
Printing of Teachers training material	51			
Design of Teachers training material	254			So far, we just conducted workshops without providing the teachers with extra material as it did not prove to be necessary.
Printing of final course books (25 copies)	127			
Design & Layout of final course material	255	255		Paid to graphic designer.
Printing of initial sample training material	229	200	+29	We did not need to print the amount of copied budgeted
Diving Cost (Havelock)	977	977		
Diving Cost (Chidiyatapu, Rutland, Cinque)	549	549		
Accommodation & food (30 nights)	427	610	-183	We had predicted a difference and used the remainder was paid by us.
Researchers inter-island travel	183	225	-42	We had to make more trips than predicted
Researchers travel to the islands	1144	1803	-277	We had predicted a difference and used the remainder was paid by us.
App creation		250	250	See miscellaneous
TOTAL	4994	5217	223	

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

Going ahead, since the boat diving issues have been resolved by the administration, we feel it is important to do a refresher course for dive instructors at Havelock and Chidiyatapu and the promote the course more extensively with visiting divers.

We also are looking forward to the development of the app as we feel it will make it more enticing for divers to do the protocol and easier as they can simply download the app and go through the theory before they arrive at their vacation.

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?

Yes, we used The Rufford Foundation logo on our dive slates, the ACE diver book and all the questionnaires (150 with divers, 30 with dive instructors and 12 with scientific advisors) that we conducted.

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

Nayantara Jain: Project Supervisor

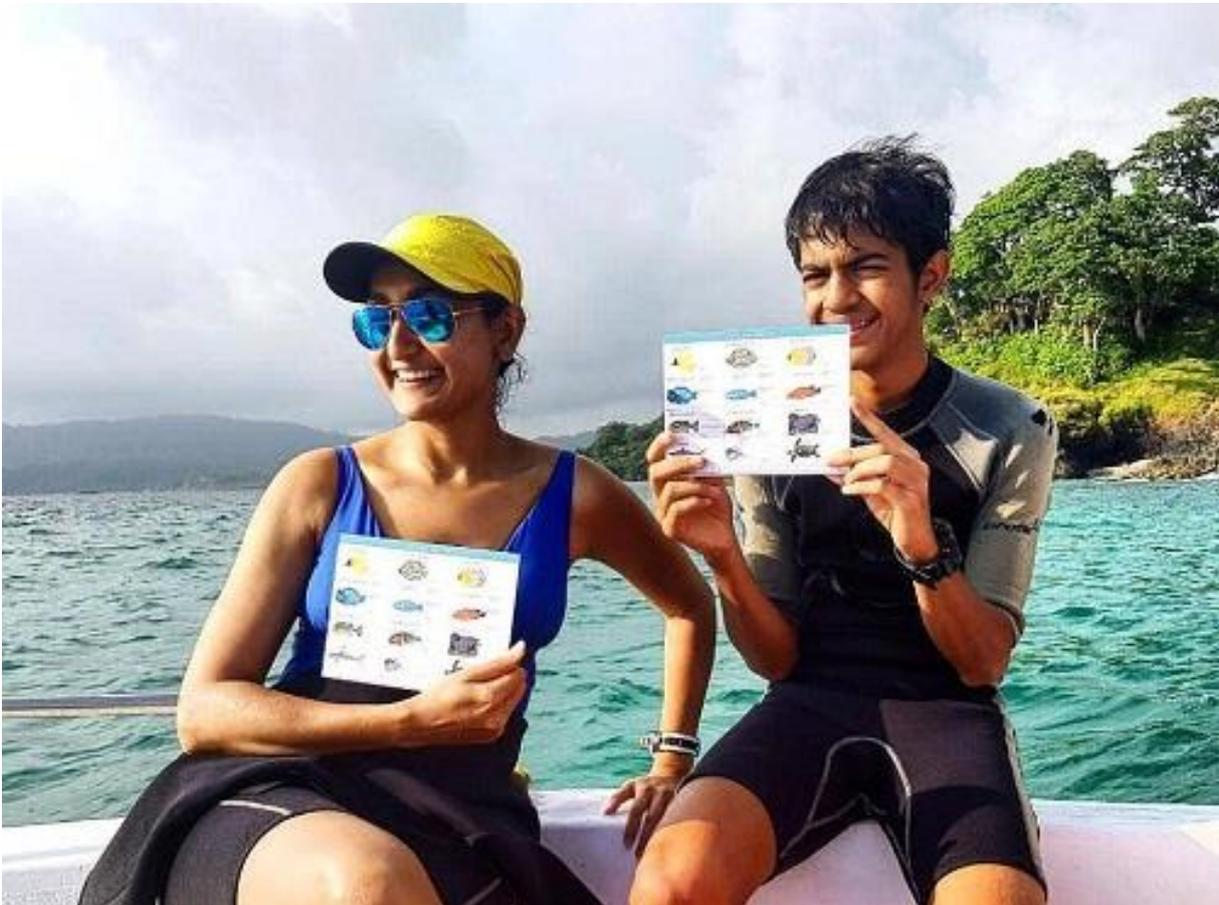
Roshni Yathiraj: Assistant

Sumer Verma: Dive advisor

Niyati Mirajkar: Proof reader & editing the book.

12. Any other comments?

We are very grateful for having received this grant and look forward to keeping you apprised of the continued progress in the project. We really hope for it to take off this year in terms of getting more citizen scientist divers involved.



Students using the Ace Diver Slates.