

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	Angela Randazzo Eisemann
Project title	Diversity and Resilience in the Marine Protected Area Cordelia Bank, Roatan, Honduras.
RSG reference	20951-1
Reporting period	May 2017 to April 2018
Amount of grant	£5,000
Your email address	angela.randazzo@cinvestav.mx
Date of this report	27 th April 2018

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
Monitoring key ecological features in Cordelia bank MPA.				The key ecological features that were monitored are the following: 1. Coral and fish abundance and diversity. Benthic cover. 2. Coral condition (bleaching and mortality). 3. Environmental variables (currents, temperature, light intensity).
Integrating key actors of Roatan's community.				Several workshops were organised to train volunteers living in Roatan Island to help with the benthic cover and coral condition monitoring. A total of 42 people contributed to this work in several ways.
Analysing the data collected to better understand spatial patterns of diversity and resilience in Cordelia Bank MPA.				Some exploratory advances were presented to stakeholders and decision makers through oral presentations and a written report. More deep analyses will be done in 2018 and 2019 (the last 2 years of my PhD thesis) and will be shared with all the actors involved.
Generating management tools.				The management tools are: 1. A written report with the exploratory analyses that have been done, using the data collected in 2016 and 2017. 2. Habitat, diversity, stressors and resilience maps, which are still being developed. 3. An analytical framework to monitor key elements of the MPA system, in order to orientate management actions. This framework will be systematized in the conclusion of my PhD thesis.

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

The project did not have any unforeseen difficulties, because this was the

second year of monitoring, so the lessons learned from the first year were put into practice. In sum, all the data collection was successful. Moreover, the first stage of analyses is already finished, and the time that remains for the PhD thesis (2018 and 2019) will be used to develop the management tools and information that can help co-managers to better orientate management actions in Cordelia Bank Marine Protected Area (MPA) and other coral sites in the Mesoamerican Reef.

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

The most important outcomes of my project are linked with the advances in the scientific knowledge of an emblematic protected area of the Mesoamerican Reef (MAR) in the context of rapid local and global changes.

These outcomes are:

- Presenting part of this research in the European Coral Reef Symposium (ECRS) in an oral session, which was held in Oxford in December 2017.
- Giving two oral presentations in January 2018, explaining the first results of the analysis done for the data collected in 2016 and 2017 campaigns. The first meeting was aimed to co-managers of Cordelia Bank MPA and the second to the general public.
- A written report that was presented in March 2018 to stakeholders and key actors, integrating the first results of this research.

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

Many International and local NGOs were involved with the project, through helping with logistics and volunteering. They benefitted from this project, through the outcomes of it (presentation of relevant information, written report, and further management tools, articles and thesis report that will be shared when finished).

I have trained 16 volunteers in coral and benthic organism identification and how to assess coral condition. Most of them helped in the different monitoring campaign of this project and are now able to help in some further monitoring using standardised methodologies that are used all along the Mesoamerican Reef region.

5. Are there any plans to continue this work?

The plan is to deepen the analysis of the data collected. This information will be used to write two scientific articles and a thesis report, which will be shared with all the co-managers of the MPA Cordelia Bank, and all the people who volunteer and contributed to this work. Moreover, a final presentation aimed to the co-managers of the MPA with all the maps and conclusions to orientate management practices in Cordelia Bank and Roatan will be done at the end of this PhD thesis (December 2019).

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

I have already done two oral presentations on 15th January 2018, before leaving Roatan (where the fieldwork was located), in order to share the first exploratory analysis of diversity and resilience.

The first presentation was aimed for co-managers of the MPA and was done in Spanish (their native language). The second presentation was for general public and was done in English, which is the more common language spoken in Roatan. The link to this second presentation is:

http://prezi.com/eq_9apsoanj7/?utm_campaign=share&utm_medium=copy

Then, I have sent a written report in March 2018, systematising all the information analysed. The report is attached to this document.

I am currently working in the redaction of a first article about the drivers of resilience in Cordelia bank MPA and the Mesoamerican Reef. I will submit this article in June 2018. The second will be about the diversity and redundancy spatial patterns of this MPA, and will be summited in the first semester of 2019. When these articles will be published I will shared them with all the contributors to this project.

Finally, I will present a thesis report in December 2019, which will also be shared broadly.

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 RSG was used from May 2017 to January 2018, in all the monitoring campaigns planned for 2017 part of this PhD project, including:

1. The third biological campaign (June 2017).
2. The second reef condition campaign (October 2017).
3. The fourth biological campaign (November 2017).

Moreover, the data from the environmental sensors was collected in May 2017, September 2017, November 2017 and January 2018. After data collection, the sensors were installed again in the field in June 2017, September 2017 and November 2017.

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
Gas and oil for the RMP boat	1800	1941	-141	We had to add some days of monitoring because of the weather.
Captains Tips	300	350	-50	We had to monitor 5 more days than planned, and the tips were given by day.
Tanks Rental	700	460	240	I had discounts in tank rentals with "Tobri Dive Resort" because I was doing a research in Cordelia Bank MPA.
Equipment and volunteers transportation in Roatan	1000	1066	-66	I had more volunteers that I planned.
Volunteers and Captains food	1200	1183	17	
TOTAL	5000	5000	0	

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

It is important to analyse deeply the data collected and generate management and practical tools with it. Then share it with the key actors that can promote reef persistence in Honduras. It is also fundamental to continue to establish strong bridges between scientist and decision makers and to base decisions upon a better understanding of natural systems and their interaction with society.

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?**

The Rufford Foundation logo was used in all the oral presentations about this research that were done during this last year. These included an oral presentation in the European Coral Reef Symposium (ECRS), the two presentations done for co-managers and the general public in Roatan and the advances presentation that I did for the scientific community of the CINVESTAV, in Mérida Mexico, the institution where I am based for my PhD thesis. The Rufford Foundation logo is also in the written report I shared with the contributors of this work.

Moreover, one of the volunteers of this project, Nicole Helgason has written a note for her organisation about Cordelia Bank and linked my name to the RSG

page:

<https://reefdivers.io/codelia-banks-healthy-reef/3955>

I also recommended RSG application to colleagues working in the conservation field in Honduras, in order to promote a network of ecologists that are advancing with the knowledge of marine resources poorly understood and understudied. From what I know, one of those colleagues, Andrés Alegría has applied successfully.

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

This project was held through a broad partnership between different organisations (scientific centres, governmental institutions, NGOs) and people from Roatan community.

A full list of the members of my team and their role in the project is presented in the following Table.

	Full Name	Organisation	Project Role
1	Ernesto Arias	CINVESTAV, Mérida	PhD Supervisor.
2	Jenny Myton	Coral Reef Alliance (CORAL)	Field Supervisor. She also has lent me the environmental sensors belonging to CORAL.
3	Ian Drysdale	Healthy Reef Initiative (HRI)	He always helped me with logistics and equipment for the different monitoring campaigns.
4	Anuar Romero	Proyecto Marino Costero	The "Marino Costero" project gave me a space to work in their office.
5	José Peralta		
6	Yeni Salinas		
7	Eduardo Rico	Roatan Marine Park (RMP)	All the RMP staff has helped me during the fieldwork. Their support was through monitoring logistic, by lending me the boat and assigning a captain (Leonel or Eleazar) and a captain assistant (Isaias or Humberto). They also contribute by helping to find volunteers and volunteering for the project.
8	Gael Gutierrez		
9	Nic Bach		
10	Crystal Vance Guerra		
11	Leonel Ayala		
12	Isaias Ramírez		
13	Humberto		
14	Eleazar Ruíz		

15	Martijn Muller	Tobri Dive Resort	They all have helped with the logistics for the monitoring campaigns and they have volunteered for several monitoring campaigns.
16	Irma Korb	Ecodivers	
17	Antal Borcsok		
18	Ale Thompson		
19	Tamsyn Downen		
20	Liam Shearer	Subway Watersports	They have volunteered for the diversity campaign or the sensor collection/installation.
21	Daryl Craig		
22	Tripp		
23	Arturo Corvino		
24	Josh Poczwa		
25	Vance Solseth		
26	Clayton Burleson		
27	Takeshi Tong	Ecodivers	They have volunteered for the diversity campaign or the sensor collection/ installation.
28	John Holland		
29	Francheska Krysiak		
30	Victoria Sengluang		
31	Sayde Sevell		
32	Scott Clayton		
33	Nicole Helgason	Reef Divers	She has volunteered for the benthic campaign, took beautiful photos and videos, as well as edited a video showing the high coral coverage in Cordelia Bank.
34	Heidi Oshei	Native Sons	She has volunteered for the benthic survey and the condition campaign.
35	Theo Jackson		They all helped with the condition campaign.
36	Angus Bilton		
37	Daniela Mejía	Go Blue Utila	
38	César Pineda	CURLA, UNAH	
39	Elsa Rosales	Independent	
40	Andrea Rivera	CINVESTAV	She helped me to train the volunteers for the condition campaign.
41	Pablo Allonca	Independent	They help me to install and collect the information from environmental sensors.
42	Erika Gress		

12. Any other comments?

I will like to offer my most sincere gratitude for the Rufford Foundation support. This work represents an important contribution to the marine research in Honduras, focused in one of the most emblematic marine protected areas of the whole Mesoamerican Reef eco-region. In fact, Honduras is a country with so much research potential in order to better value our resources and use them in a more sustainable way.