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	Adam Suchley
Project title	What is the effect of Marine Protected Areas on the coral communities of the Mexican Caribbean?
RSG reference	17120-1
Reporting period	May 14th 2015 – March 30th 2017
Amount of grant	£4,900
Your email address	adamsuchley@gmail.com
Date of this report	10/4/2017

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
Survey the coral reefs of the eight Marine Protected Areas (MPAs) of the Mexican Caribbean and suitable comparison localities				We surveyed 49 sites across seven MPAs and comparison localities. However, due to time constraints it was not possible to visit Chinchorro Bank, the most remote MPA.
Compare coral reef condition inside each MPA with condition outside and/or other MPAs to understand drivers of protection success. Develop mathematical models to understand drivers of reef condition in terms of MPA characteristics and external factors.				Achieved. Due to the wide heterogeneity in biogeographical conditions experienced a simple comparison between MPAs and unprotected comparison sites is of limited use. Consequently, a mathematical model was developed to understand the drivers of reef condition.
Communicate results with MPA managers in the region to inform MPA network planning. Share data with CONANP and others.				This year I aim to present our findings to a broad audience of MPA managers and other investigators at the International Congress for Conservation Biology ICCB 2017. Direct communication with local stakeholders will be performed as part of a related project which is performing further ecological analysis including reef fish communities. Coral reef photo-quadrats used to survey the reefs will be uploaded to an online platform (https://coralnet.ucsd.edu/) where they can be shared with managers.

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

We programmed the field work to take place during the summer of 2016 to take advantage of the favourable weather conditions normally experienced during the summer. Even so, field trips had to be postponed on a number of occasions due to the weather and consequently field work lasted longer than expected, running from April through November.

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

1. Marine protection was observed to have a positive impact on coral community condition. The impact of protection increases with MPA age, size and effectiveness. As MPA size largely reflects reef area in each locality, little action can be performed regarding this. The positive impact of MPA age indicates that marine protection should be maintained going forward, although detractors often argue that MPAs are first established in sites exhibiting better condition, and consequently an effect of protection length is not actually observed. MPA effectiveness was assessed in terms of management plan, availability of personnel and equipment, and enforcement, based on an evaluation performed by Healthy Reefs Initiative (www.healthyreefs.org/cms/latest-reports). This can be used as a guide to MPA managers as what they need to do to improve MPA effectiveness, and potentially coral condition.
2. Herbivorous fish biomass was also found to positively impact coral community condition. In general, complete No Take Zones (NTZs) were found to exhibit greater herbivorous fish biomass and should be maintained, and other herbivorous fish protection measures implemented, to benefit coral communities.
3. However, we also showed that local human activities threaten coral community condition. Consequently, it is important to continue to monitor reef sites, particularly those located nearby to coastal developments. Ongoing monitoring programmes should integrate water quality monitoring procedures and assess the impact of deteriorating water quality and elevated nutrient levels on coral communities.

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

Not directly relevant.

5. Are there any plans to continue this work?

We plan to communicate the results with local managers. The data will also feed into an ongoing project on temporal change in coral reef condition and the effect of marine protection.

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

This year I aim to present our findings to a broad audience of MPA managers and other stakeholders at the International Congress for Conservation Biology ICCB 2017. A scientific paper has been drafted and will be submitted to a peer-reviewed journal shortly. The format of direct communication of the results with local managers is TBD, although coral reef photo quadrats used to survey the reefs will be uploaded to an online platform where they can be shared with managers.

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 funds were used from April to November 2016 which is within the 24-month period anticipated.

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
SCUBA dives (including boat hire and fuel)	2900	3400	+500	Slightly higher costs than anticipated. Some providers included accommodation
Expedition accommodation/subsistence	1300	1000	-300	Budget accommodation used
Transport to MPAs (land and sea)	700	500	-200	Surveys were grouped into longer field trips to reduce transport costs
Total	4900	**4900**	0	

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

I feel that it is important to continue to monitor reef sites, particularly those located nearby to coastal developments. Ongoing monitoring programmes should integrate water quality monitoring procedures and assess the impact of deteriorating water quality and elevated nutrient levels on coral communities.

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?

I used the logo on a presentation given at the largest and most prestigious coral reef conference: the International Coral Reef Symposium 2016 (ICRS 2016).

Furthermore I acknowledged my funding in an (unrelated) peer-reviewed scientific paper (https://peerj.com/articles/2084/), and will do so in the scientific paper detailing this project.

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

- Dr Lorenzo Alvarez-Filip: Project oversight (responsible academic).
- Adam Suchley: I performed all the coral reef benthic surveys and data analysis.
- N. Espinosa-Andrade / A. Medina-Valmaseda: Performed reef fish surveys.
- E. Perez-Cervantes: Logistics and dive buddy.

12. Any other comments?

I am grateful to the Rufford Foundation for providing the funding for this work and believe it has contributed to Marine Protected Area effectiveness knowledge.