

## 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. 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. 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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

---

#### Grant Recipient Details

<b>Your name</b>	Matthew Jasinski
<b>Project title</b>	Spatial scale dependence of biodiversity for conservation of the Mesoamerican Barrier Reef
<b>RSG reference</b>	14843-1
<b>Reporting period</b>	02/2014-02/2015
<b>Amount of grant</b>	£5970
<b>Your email address</b>	Matthew.j.jasinski@gmail.com
<b>Date of this report</b>	04/03/2015

**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
Collect comprehensive fish data from five locations (northern, central and central regions of the barrier reef)			✓	At each location we surveyed three habitats with four dives in each habitat – 10 x 25m transects per dive = 120 transects/location. Identified fish species, size, adult/juvenile
Collect photographic data from five locations (northern, central and central regions of the barrier reef)			✓	On every transect above we took photos of nine 1m <sup>2</sup> quadrats to record reef health (%cover of live coral, dead coral algae, disease and more) totalling 1080 images per location
Collect video data from five locations (northern, central and central regions of the barrier reef)			✓	Every transect was videoed and split into 100 equal time frames from which a single image is analysed to identify the benthic species of algae, hard coral, soft coral, or sponge = 12000 species/location
Provide valuable training and experience to Belize Fisheries Officers and other local team members in coral reef conservation research and survey methodologies.		✓		There was limited training for Belize Fisheries personnel as they often had to attend priority situations policing the reserves.

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

There were only two unforeseen difficulties that arose and both were dealt with and overcome albeit at extra cost. The first was that the boat booked for use for the project had a major engine failure prior to arrival. To get a suitable vessel I had to negotiate a hull from one boat owner and the use of engines from another, and a captain that both were happy with. This was partially negotiated by my in country team and I was able to finalise agreements on my arrival.

The second obstacle was the weather. I had contingency days planned in to the schedule to allow for poor weather, mechanical issues, supply runs for fuel, food, equipment needs etc. There were however many days of uncharacteristic strong winds for that time of year which prevented us being able to navigate channels to dive the fore reef safely. In one location particular we had run out of time so the only way successfully complete the location was to negotiate the charter of a dive boat large enough to safely handle the sea conditions. We were able to do this through Belize Diving Services in Caye Caulker who also helped us out with a number of other logistical issues.

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

- 1) Provide a major contribution to research in distinguishing biodiversity patterns over multiple scales and species-area relationships which are fundamental to the present understanding of many key and high profile issues in conservation biology. The findings will be disseminated through peer-review papers, reports and presentations.
- 2) This project will provide a thorough understanding of the effects of spatial scale on biodiversity and ecosystem function. This is essential for marine conservation and Marine Protected Area (MPA) planning and management, as it elucidates the connection between local and regional species richness. Through the sharing of data, results and reports from this project with the Belize Fisheries Department, partnering NGOs and groups such as The Healthy Reefs Initiative, this project will be used as a scientific basis to reevaluate and guide the size and linkage of marine reserves/MPAs throughout the region.
- 3) This project will provide valuable training and experience to Belize Fisheries Officers and other local team members in coral reef conservation research and survey methodologies. This training, along with the extensive baseline data from this project will be processed and utilized by Tobacco Caye Marine Station (TCMS) and supporting NGOs in their outreach and education programmes with stakeholder communities and local school children, and conservation projects. These projects aim to enhance the environmental curriculum of students from Belize and work to empower local community members to participate in conservation activities to sustain livelihoods through education, restoration, protection, policy recommendations and co-management of MPAs.

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

Tobacco Caye Marine Station was heavily involved in planning/organising much of the in-country logistics (booking accommodations, obtaining research permits, sourcing some equipment) as well as providing personnel for the duration of the work who assisted in collecting the data. Other residents of Tobacco Caye provided subsistence for the team, boat and engines, and the captain who provided much more assistance than skippering the boat. The Belize Fisheries Department and local NGOs benefitted from the data collected to feed into their data sets as well as their personnel who were trained in and experienced new data collection and research methods.

**5. Are there any plans to continue this work?**

I plan to work closely with Tobacco Caye Marine Station in applying for continuation grants to further this research and to include new locations. Once the data is analysed and potential patterns/relationships emerge then this will lead to further in depth research. It is the aim that Tobacco Caye Marine Station and other communities that participated/contributed to this initial project will take ownership as further research avenues are developed and it is my intention to support, advise and be involved in whatever capacity I can.

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

This project Will for the main part of my PhD thesis, the chapters of which will be publish as a number of journal articles. All the data will be provided to the Belize Fisheries Department as well as NGOs focussed on marine conservation and management. Once the data has been analysed and

conclusions made, a full and detailed report will go the Belize Fisheries Department along with those that are involved in MPA management and planning. The work will also be presented at relevant conferences where possible.

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

The RSG was used from April 2014 – July 2014. The time frame of the project itself is Feb 2013 – Feb 2016

**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
Boat Rental + Captain	£1776	£3320	+£1544	The change of boat was £16 per day extra and Captain had to be paid in addition to boat rental £770 + additional charter of large boat for a day £240
Fuel	£1243	£1485	+£242	Additional mileage to estimate/boat load effect of mileage
Tank Rental/air fills	£595	£669	+£74	Change in exchange rate with US\$ and additional tank rental for extra personnel on some dives
Subsistence (food + accommodation)	£864	£1961	+£1097	Additional personnel + boat Captain for some locations
Equipment	£1492	£2039	+£547	
Flights	£0	£750	+£750	Paid for by other funding
<b>TOTAL</b>	<b>£5970</b>	<b>£10224</b>	<b>£4254</b>	The additional personnel contributed £1500, £1000 was provided by Scientific Exploration Society, and University of Portsmouth paid for flights. Remaining overspend came from personal contingency

With the exception of equipment, the above costs are converted from US\$ at a rate of 0.616 (BZE\$ is at a fixed rate of 2:1 with the US\$)

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

The most important next steps are to get the data analysed and to send the results to the relevant policy makers and organisations involved in MPA planning. This will then be followed by publications for the wider audience

**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?**

There have been no materials produced to date. However I am in the process of putting together presentations of the work so far and writing report. In each of these RSGF will be mentioned as the main financial supporter of the research and the logo will be included where appropriate in any materials produced or newsletters.

**11. Any other comments?**

It was fantastic to see the in-country support and enthusiasm towards this project when discussing it with local stakeholder, and I firmly believe that this work as well as the intended future work will have a strong and beneficial impact on MPA management in the region, and be a positive contribution to the reef conservation efforts in Belize.