

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	Luis Malpica Cruz
Project title	Quantifying ecological and socioeconomic impacts of an invasive predator on marine ecosystems
RSG reference	15373-1
Reporting period	May 2014 to June 2015
Amount of grant	£6000
Your email address	lmalpica@sfu.ca
Date of this report	July 6, 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
Baseline for assessment of lionfish invasion status in Veracruz			X	
Assessment of lionfish management strategies in Veracruz			X	
Socioeconomic interviews with fishermen			X	
Socioeconomic interviews with tourists			X	

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

While assessing the management strategies implemented by local stakeholders and while conducting our interviews we encountered antagonism between different groups (i.e. fishermen unions, dive shops, fisheries ministry) due to an adverse political climate after the approval of a port expansion. This will undoubtedly hinder synergies needed to efficiently tackle the lionfish invasion in future years.

Also, not all fishermen groups (different fishermen unions) were willing to participate in our survey, mainly because they are either afraid of repercussion from fishing regulatory bodies or because they are tired of political propaganda. We tried to talk with all groups openly and described our project in a lay manner so that anybody could understand our goals, but never forced any fishermen to participate if they preferred not to.

Lastly we had some problems in our second visit to Cozumel, this in regards to obtaining the necessary permits to being able to survey tourists at the international airport. This despite positive work we did over the summer and after following all bureaucratic procedures that were requested from us.

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

We established a baseline of the lionfish invasion in the Veracruz Reef System. In very few places of the invasion is the invasion surveyed little after the lionfish is first sighted. Further, we were able to do a second ecological survey season in 2015 in addition to the one originally planed in 2014. This will allow the implementation of a recurrent monitoring programme, which could be coupled with removal strategies.

We obtained very relevant information regarding the potential socioeconomic impacts of the lionfish invasion. Despite that we have good information on the ecological impacts of lionfish

in the invaded area, currently, there is very little to non-existent information regarding the associated economic impacts.

We found evidence of bad strategies that have been widely used when dealing with the lionfish invasion, in particular that of lionfish tournaments or derbies. These observations have led me to collate for the first time the results of lionfish tournaments from the tropical North Western Atlantic, Gulf of Mexico and Caribbean, with the goal of identifying the factors that drive the success (or failure) of lionfish tournaments. I am currently analysing this extensive dataset.

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

For this part of the project we were not particularly looking to actively involve the community beyond them allowing us to interview them, which was key for the success of this project. However the results obtained could help local communities to push managers and authorities to look for strategies that tackle socioeconomic impacts of the invasion and not only ecological ones.

Furthermore we hired local biology students to assist on the ecological surveys and socioeconomic interviews we made, both in Veracruz and in Mexico. Lastly we hired local boat drivers familiar with Veracruz reefs.

5. Are there any plans to continue this work?

Yes. We are looking to use our data to propose local managers to establish a pilot recurrent monitoring programme and implement lionfish removals in specific locations within the Veracruz Reef System. The idea of this new project will be to hire local fishermen and perform lionfish removals at specific time intervals to mitigate lionfish dispersion and strive to have a lionfish-free core zone within the park. Further, and as the invasion progresses we are looking to make fishermen communities from different areas of the invasion share management strategies in an effort to create a lionfish fishing market in Veracruz, such as the one that currently exists in Cozumel.

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

All the data obtained with this project is currently being analysed and will form the backbone of reports, manuscripts that will be published in peer-reviewed journals, and presentations at workshops and conferences in order to better inform managers, fishermen and stakeholders of the lionfish impacts.

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 grant was used from mid May of 2014 to mid June of 2015. The anticipated length of the project was also close to a year.

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
Housing	0	500	500	This helped to cover housing during second ecological sampling in Veracruz
Food	600	1000	400	This helped to cover food expenses during second ecological sampling in Veracruz
Incidentals	1000	0	-1000	This amount was used distributed in other items as needed
Airfare	0	400	400	A second trip to Mexico was made to do a second ecological sampling not considered in the original proposal
Travel in country	600	600	0	None
Supplies/equipment/materials	1200	1300	100	Field gear that needed replacement
Boat Rental	1800	1200	-600	Boat rental was less than originally estimated
Personnel training and stipend	1200	1250	50	Hired additional dive assistants

Note: Exchange rate 1 GBP = 24.5 MXN

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

The main steps are first to complete data analysis and prepare all materials we expect to produce from this project. We also plan to attend an international conference taking place in Panama in early November 2015 where we will participate in a workshop with other entities working with the lionfish invasion. We are looking to bring a fishermen union leader from Cozumel to share their experience of marketing lionfish as a management strategy. Also, we

consider important to continue our dialogue with the Veracruz park authorities in order to start the lionfish monitoring/control program we briefly discussed before.

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

Yes. We used it in Ecocimati A.C.'s website in the corresponding lionfish project microsite. We also used it in a poster distributed among dive, and fishing shops in Veracruz to promote the lionfish sighting system (another management strategy implemented during this project). We also used it in the online surveying system (FluidSurveys/SurveyMonkey), used to deliver tourist interviews in Cozumel. Also, we participated in the Cozumel Scuba Fest 2014 (December of 2014) where we had a stand with information and a couple of posters acknowledging The Rufford Foundation their contribution to our project. Finally we uploaded a video describing the ecological monitoring activities in Ecocimati's YouTube channel where we thank the Rufford foundation for sponsoring this project (<https://www.youtube.com/watch?v=e7pebrXRmIM>). Likewise, we will use The Rufford Foundation logo and name in future presentations and publications that use results originated from this project.

11. Any other comments?

Just to greatly thank The Rufford Foundation for their support without which this project would not have been possible.