

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	Nadia Tamara Rubio Cisneros
Project title	Fisher's perceptions of long-term coastal exploitation and tourism development at Holbox Island
RSG reference	21943-2
Reporting period	June
Amount of grant	5 000
Your email address	Rubio.nadiat@gmail.com
Date of this report	July 5 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
Continue to generate taxonomic information on the diversity and availability of inshore fishery resources exploited by humans through a very wide temporal scale.				
Provide a long-term description of fishing practices in Holbox. We aim to generate a present-day baseline for inshore resource exploitation, however it is necessary to have an idea of historic baselines from times when predation practices were different.				<p>Some information obtained from this goal is part of in an e-book published by Memorial University, Newfoundland Canada</p> <p>Rubio-Cisneros, N., Moreno-Báez, M., Sáenz-Arroyo, A., Rissolo, D., Glover, J. 2018. Small-scale fisheries at Holbox Island Mexico (online eBook section). Publisher: Too Big to Ignore, Global Partnership for Small-Scale Fisheries Research. Memorial University of Newfoundland, St. John's, NL. (link below)</p>
Develop a preliminary underwater assessment and novel underwater photographic documentation of important fishing sites documented by fishers' traditional knowledge.				<p>The information obtained in objectives 1 and 2 allowed us to develop a preliminary underwater assessment of several key historical fishing sites on Holbox. From the traditional fishers' knowledge, we collected over 104 historical fishing sites. Since we had a limited budget for the preliminary underwater assessment, we picked only a few historical fishing sites that are nowadays important for tourism activities. We were able to collect a considerable amount of underwater photographic documentation of those sites. We are currently analysing this data qualitatively to develop a scientific paper. However, I created and edited several science outreach videos about these historical fishing</p>

				sites that we have shared with the local community and with local authorities of Holbox (see below for details).
4. Continue to assess habitat and fishery resource changes in Holbox from a historical and current perspective by integrating fishers' traditional knowledge, and historical and archaeological sources.				Even though we have collected the interdisciplinary data needed to finalise this objective we are still in the process of analysing it. I have submitted a paper related to fishery ecosystem services which includes some of the data from this objective. This paper was already under review in Marine Policy Journal, Elsevier. I am in the process of resubmitting the paper with the editor's comments.
Asses how tourism economic development has impacted the socioecological environment of Holbox and Chiquilá communities and evaluate if tourism activities are an alternative for a reduction of the fishing effort.				
Promote the integration of research and policy schemes that include fishers' perceptions and traditional knowledge to enhance understanding on how human culture has influenced the ways in which social groups exploit coastal resources.				This objective is a work in progress. Throughout this year of research, I have obtained a considerable amount of data that will allow accomplishing this objective as more of my material is published. However, I have been directly disseminating my early results with people in the community, including, tourism stakeholders, educators, and tourism and government authorities.

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

Developing the preliminary underwater assessment was a big challenge given that no diving facilities exist on Holbox. The field logistics were hard to deal. We got stolen some of the equipment and gasoline for our boat was also stolen several times. The previous was a considerable drawback but is just a consequence of how fast things are changing on Holbox. Before there were no thieves and people were safer. Elder people on the island mentioned is also a consequence of an increasing number of

very low-income immigrants that arrive on the island to work on construction jobs for tourism. The previous was a huge lesson for me since I saw in real time the need of our study and results regarding the conservation of both the social and ecological environment.

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

The social bond I established with diverse members of the Holbox community continued. This allowed us to successfully collect scientific data for this project focused on the history of fishers and tourists' perceptions.

I was able to develop novel survey methodologies to collect baseline data on tourists' perceptions of sustainability, environmental issues, and seafood consumption. I am in the process of analysing these data.

We also collected novel video recordings of historical fishing sites that are currently favorite tourist snorkeling sites. The previous can allow us to qualitatively describe these undocumented landscapes from an ecological point of view to assess Holbox's natural capital and the delivery of ecosystem services from coastal landscapes.

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

The social bonds established on Holbox allowed us to disseminate our results with islanders especially the people involved with tourism activities on the island. Locals highly appreciate our graphical material (short videos and photos) these can help the community understand the conservation needs of Holbox's natural capital and is being shared with key people on Holbox that are either in the tourism sector or the government or education sectors. Even though a version of these material is on social media, locals were given an original version of the files. I attach a list of the key people that will continue to distribute the short videos.

Franklin Ancona Campos, Social Worker on "*Escuela Secundaria Tecnica Pesquera, Francisco Hernandez de Cordoba*" and president of "*The Trash Committee of Holbox Island*".

Yara Ancona, high school teacher at "*Escuela Secundaria Tecnica Pesquera, Francisco Hernandez de Cordoba*" and director of Casa de La Cultura (House of Culture).

Elber Zapata, high school teacher at "*Escuela Secundaria Tecnica Pesquera, Francisco Hernandez de Cordoba*" and a former Fisher.

Karla Moguel, is a Professor and Director of the Tele Bachillerato Comunitario de Isla Holbox

Alvaro Canul: Secretario General del "*Sindicato de la confederación Revolucionario de Obreros y Campesinos CROC en Isla Holbox*". Alvaro's role in the community is

very important since he is the General Secretariat of labor Workers in the region. He knows many people on the island and is also involved in tourism activities.

Eduardo Pacheco Cetina, president of "The Association of hotels on Holbox".
Contact: eduardojoelp@hotmail.com

Operadora Turistica (Tourism Company) Gama Extreme
Contact: Belio Tauz and Adanelly

Operadora Turistica Explore Holbox
Contact: jaz-99@live.com.mx

Tourism Cooperative Ensueño del Caribe
Contact: Marcelino Pot

Operadora Turista VIP Holbox
Contact: info@vipholbox.com

Operadora Turística Wilber Betancourt Sabatini
Contact: 984 128 7552

5. Are there any plans to continue this work?

Yes, I am interested in continuing with my work on Holbox Island and I would also like to expand this work into the town of Mahual. This is also rapidly changing by tourism development and is also facing ecological and social conflicts. I have established a new collaboration with Dr Ernesto Arias from CINVESTAV Merida. He has worked in the region studying ecological changes in coral reefs caused by anthropogenic actions and climate change.

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

I have been sharing my results with local people on the island using the social network of fishers and friends I have created throughout the past 3 years. I have also used social media to disseminate my results to broader audiences. I recently met with people from the Fundación Pedro y Elena Hernandez A.C. They are working with policy aspects of Holbox, and I will collaborate with them by sharing my results. The previous will contribute to generating guidelines for the Management of Yum Balam Natural Protected Area which includes Holbox Island. A scientific paper for my research on Holbox is under review this will be published later this year. I attach a file of an old version of the paper I kindly request you not to share this with the public since it is under review and also edits are being made to it for revision. Lastly, I have a considerable amount of data to analyze and will be generating products during the coming months of this year and early 2019. I am still working on the Holboxfish.org website which will also disseminate our findings.

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

Over 1 year June 2017 to June 2018, the grant was used over the actual length of the project.

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
Round-trip flight Cabo San Lucas, Baja California Sur to Cancun Mexico (1x). Expense for colleague Erick Higuera	287	287		
Shuttle Cancun-Holbox, roundtrip	102.5	102.5		
Gasoline for car transportation to Holbox from Merida city	229.6	229.6		
Accommodation for 40 nights at the field hotel price is an estimate of 60 dls per night	1968	1968		
Estimated expenses for meals per day 30 US dls (breakfast 5 US dls, lunch 10 US dls, 15 dinner) for 40 days	984	864	120	I used this money for the diving expenses. Diving expenses were 200 dls more than expected.
Diving expenses which include boat rental, captain and sailor fees, gasoline for boat, diving permit about 289.6 US dls per day	1428	1548	200	Diving expenses were 200 dls more than expected.

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

I believe the continuation of underwater surveys of historical fishing sites is essential. This kind of research is costly and the logistics to do it on Holbox are very hard. However, is possible to do it. I have contacted Dr Ernesto Arias from CINVESTAV Merida who works with ecological surveys on the Mesoamerican Barrier Reef System. We talked about our results, and hopefully, we can have future collaborations to develop a systematic study of underwater surveillance of Holbox historical fishing sites.

I would like to participate in raising funds to improve the visual material that exists in the House of Culture of Holbox. We have developed considerable graphic material that doing a permanent exhibit of our photos and probably raise money to have a permanent screen that allows the kids to watch our underwater videos will be a really good thing for the young generations to value Holbox natural capital.

Lastly, I am interested in studying another nearby site called Mahaual that is also rapidly changing in the Caribbean and is also facing ecological and social conflicts. Doing this will allow me to compare Holbox's results with other nearby sites. I am very interested in using the methodology developed on Holbox to study the fishing community of Mahaual which has almost entirely sold their coastal properties and developed their neighbourhood away from the shore.

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?

Yes the Rufford foundation has received publicity in all the material I have published including online posts, talks on scientific conferences, and scientific articles.

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

Holbox Fishers that supported this research at the field (for the first and second year) and helped us to establish a social network with people involved in tourism activities on the island: **Miguel Zapata, Vicente Caceres, Jose Guadalupe Peraza, Rodolfo Escamilla, Julio Zapata, Edgardo Zapata.**

Ingrid Baselis, former Director "Casa de la Cultura de Isla Holbox", a government agency that develops cultural events at the Island. She helped us in providing local guidance to interact with some authorities on the island. She previously collaborated with us in doing several cultural events on La Casa de La Cultura de Holbox.

Eduardo Pacheco, native from Holbox and environmental activist at Alma Verde. Currently he is the president of the Association of Hotels on Holbox. He provided information about some tourism aspects and history of the island.

Yara Ancona, is a high school teacher at "Escuela Secundaria Tecnica Pesquera, Francisco Hernandez de Cordoba" and is now the new director of "Casa de La Cultura de Isla Holbox". She always has a very positive attitude to help us continue disseminating our project results on the Island.

Francisca Antele, biologist native from Chiquilá, working in bird conservation. She collaborated with us by helping us to establish social bonds with people from Chiquilá Port

New Scientific Collaborators for the second year of this project

Erick Higuera: was the dive master of the diving activities on Holbox and the underwater cinematographer <http://www.erickhiguera.com/bio.php>
He provided guidance to Nadia Rubio in the edition process of visual material.

Dr Silvia Salas at CINVESTAV Merida provided guidance on small-scale fisheries and invited us to participate on an e-book related to small-scale fisheries. She is also a co-author in the scientific paper.

Ebook by Too Big To Ignore | Global Partnership for Small-Scale Fisheries Research
<https://drive.google.com/file/d/1YaG5dqMuwk7jZTfevdqI6WNm1YnFjLUV/view>

Dr Gustavo Marin CIESAS specialist in anthropological studies of coastal communities in the Yucatan Peninsula. He collaborated with Nadia Rubio in sharing his knowledge for the interpretation of human interaction results. He is also a co-author in the scientific paper.

<https://ciesasdocencia.academia.edu/GustavoMar%C3%ADnGuardado>

Dr Igor Ishi Rubio Cisneros

Dr Igor is a geologist who is helping us to interpret the photographic material focused on the sedimentary formation of Holbox's wetlands. This part of the project emerged in the field. We had the opportunity to take a drone to the field and were able to document some aerial pictures of Holbox wetlands. We are in the process of analysing this information.

Chapin Dorsett, undergraduate student from Whitman College, Walla Walla, Washington. Chapin was an international intern for this project. She came to visit Holbox Island to work on the tourism surveys. She was a student of mine when I thought in The School for Field Studies in Bocas del Toro Panama. Here we developed a methodology to study tourism perceptions and coastal exploitation. Some of the tourism results of Holbox Island will be part of her undergraduate thesis research.

Collaboration with former Rufford grantee

Karen Fuentes, we are planning to develop a kid's book about the abundance of species groups that inhabited Holbox waters. This collaboration **was not able to happen** yet mainly because of time restraints. However, a main draft of the idea is developed, and we hope to accomplish it in the near future.

Past and Current Scientific Collaborators

Dr Moreno-Báez research is centred on the human geographic studies of the ocean, including the history and cultural studies toward understanding the ocean as a space of eco-cultural hybridity. She is helping me analyse the tourists' data since we want to give this information a spatial component to integrate it with the spatial information on fishing areas we have previously collected. She is also an also a co-author in the scientific paper.

Archaeologists Dr Rissolo and Dr Glover lead the “Costa Escondida Project” since 2006 which investigates the relationship between the Maya and their coastal landscape over the past 3,000 years. Dr Rissolo and Dr Glover shared their knowledge and archaeozoological data. They are also co-authors in the scientific paper.

12. Any other comments?

I am very grateful and kindly thank the opportunity The Rufford Foundation has given me to continue with this project.

