

Final Project Evaluation Report

Your Details					
Full Name	Yedda Christina Bezerra Barbosa de Oliveira				
Project Title	Mapping high use areas for sea turtles in Paraíba, Brazil with the involvement of fishing communities				
Application ID	25152-1				
Grant Amount	£5000				
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Date of this Report	29/01/2019				



1. 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
Identifying high use areas by sea turtles				We have recorded 218 sea turtle sightings entirely reported by fishermen along the coastline of five cities. From the data set, 15 sites were identified as aggregation areas, where we conducted the coral reef monitoring. A great confirmation for these areas as high use by turtles was record spontaneously some individuals during the underwater sampling.
Identifying the main fishing gears used along the Paraíba coast				Gillnets are the most common fishing gear used at the three fishing villages researched. These communities have a similar profile of fishery, using small motor boats or rafts, and spending daily hours at sea. However, use of the area is almost five times higher by Conde's fishermen (336.1 km ²) than João Pessoa's fishermen (69 km ²). Cabedelo's fishing area use is 100.6 km ² . This information is crucial to prioritise strategies to prevent sea turtle bycatch.
Training fishermen team (9 people) on sea turtle species identification				Despite we have dedicated two workshops for this topic, only about half of our data were identified by species, with contribution of five fishermen. We have applied a final accuracy test for them, based on correspondence of photographs and species identification, in which the rate of correct answers was 74%.
Evaluating the coral reef health				We identified foraging grounds for sea turtles composed majority by calcareous red and green algae, with low diversity. Overexploitation and impacts of tourism activities replaced



		predominant	population	from
		Gracilaria sp t	o Jania subulata	and
		Sargassum sp	over 20 years (Mo	áximo
		2015).	-	

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

We faced two difficulties during the conduction of fieldwork:

- Maintaining the data collection by fishermen regularly. Despite the work have not changed their routine, it demanded us intensive supervision weekly. The difficulty of communication with locals also made us to organise more meetings for alignment. However, it is expected that a citizen science project presents problems with consistency in data collected. In this case, the data quality was ensured by the sample expansion.
- 2. Planning of coral reef monitoring by snorkelling. As most of the turtles were recorded in depths higher than 5 m, it became the transects by snorkelling unfeasible. We replaced the method by video census (commonly used in ichthyology research), using a ballast box with four underwater cameras attached to it. We have submerged the box at 15 points of high use by turtles, recorded photographs and used the CPCe (Coral Point Count with Excel extensions) software to describe benthic composition of the foraging grounds, as proposed initially.

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

- 1. Increased protagonist role of the local community in conservation and research. By engaging three fishing communities on data collection and conducting the experience of awareness, we were able to include them as conservation actors.
- 2. Highlighted knowledge about areas with potential interaction between artisanal fishery and sea turtle. By the information of fishing use area, we can guide future studies to estimate real impacts of capturing and mortality of turtles in fisheries, which has many gaps concerning the artisanal context.
- 3. Increased participation of local government in sea turtle conservation. By the dissemination of our work by own community and our communication activities, local stakeholders got to known this project. As consequence, the Conde Secretary of Environment invited our technical team to help them to develop a sea turtles conservation program.



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

We have worked with three distinctive communities from three cities, respectively: Ponta de Matos beach (Cabedelo), Penha beach (João Pessoa) and Jacumã beach (Conde). They have shown particular ways of engagement regarding individual commitment to data collection and cooperation in collective activities.

Ponta de Matos has recorded 51% of our data. However, they were less integrated between their own community and our meetings were conducted individually or in separated groups. On the other hand, Jacumã and Penha have shown a great sense of collectively, engaging others community members on our meetings and recognising professional opportunities, as result of the workshop on "community-based tourism and boating certification". Moreover, another four workshops were organised: species identification; biology and conservation of sea turtles; coral reef survey method, and final presentation.

5. Are there any plans to continue this work?

Yes. We intend to continue to carry out the activities from academic and public policy approaches. Thayse, our field assistant, is applying for a master's degree based on this pilot project at the Federal University of Paraiba, continuing data collection for better spatiotemporal characterisation. Additionally, the Conde Secretary of Environment has requested our support in the monitoring of sea turtle activities along the nesting beaches. These actions strengthen the partnerships achieved and create new opportunities with public agents and local communities.

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

In November 2018, preliminary results were presented at 2nd Symposium on Research and Conservation of Sea Turtles. The event was part of the 7th Meeting of Northeast Brazil Sea Turtle Conservation Network (RETAMANE). We also led a presentation of the outcomes of this project to the public at Paraiba Aquarium in December 2018.

We will report the outcomes of this project to the managers of two marine protected areas in Paraiba (Areia Vermelha State Park and Naufrágio Queimado Environmental Protection Area). We suggest this pilot of participatory monitoring be continued as part of the research programs for these areas by involving locals, and reducing logistical costs. Additionally, the project's results will be published in scientific papers in open access.

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

The grant was initially utilised for equipment acquisition (June 2018) and, in the remaining months, during the conduction of field activities for transportation, workshops, and subsidies for the team, as per the original workplan.



8. Budget: Provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in \pounds sterling, indicating the local exchange rate used. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Workshops	220	220	0	
Field equipment	1,342	1,215	-127	GPS trackers were cheaper than budgeted
Car rental	840	930	+90	We used transportations more than we were expecting in order to repeat meetings for fieldwork supervision
Fuel	330	367	+37	More dislocations were demanded than scheduled
Subsidies for teamwork	2,268	2,268	0	
TOTAL	5000	5000		

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

We have identified some needs and opportunities during this project, and believe the most important next steps are:

- 1. Supporting local community to professionalise fishing and tourism activities, since they already carry out these works, but irregularly.
- 2. Implementing a sea turtle watching community-based ecotourism programme in partnership with Conde Secretaries of Environment and Tourism.
- 3. Developing an assessment of artisanal fishery impacts on sea turtle survival.

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

We have used the Rufford Foundation logo in t-shirts for team, fishermen and community members. We also mentioned RF in social media (www.instragram.com/observatoriomarinho) and presentations.

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

<u>Core team</u>



Bráulio Almeida Santos (PhD in Sciences): supervisor throughout the project execution.

Douglas Nazareth Rivera (MSc in Fauna Conservation, GIS specialist): field assistant, data analyst, map elaboration.

Thayse Ferraz de Albuquerque (Biologist): field assistant, monitoring of data collection by fishermen, presentations for fisher community.

Yedda Christina Bezerra Barbosa de Oliveira (MSc in Biodiversity, sea turtle specialist), project manager, fieldwork supervision, elaboration of reports and communication.

<u>Citizen-scientist team (fishermen)</u>: data collection of sea turtles sightings

Alexandre Silva do Nascimento André Gomes Silva Francisco Alves de Lelis Ismael Cordeiro da Costa José Paulino de Lima Filho José Ronaldo Cipriano dos Anjos José Rufino dos Santos Filho Marcelo Gomes do Nascimento Roberto Barbosa Tavares

Volunteer biologists on the coral reef monitoring

Aiara Ponce de Leon Ribeiro Cardoso (MSc student): data collection in the field (Ponta de Matos and Penha beaches).

Aline Paiva Morais de Medeiros (PhD student, tropical fish specialist): training on research software Coral Point Count with Excel (CPCe) for the team.

Antônio Limeira Felinto de Araújo (PhD student, coral reef specialist): method orientation.

Erika Flávia Crispim de Santana (PhD student, coral reef specialist): data collection in the field (Penha beach).

Fernanda Virginia Albuquerque da Silva (PhD student, ecology specialist): data collection in the field (Jacumã beach).

Janete Ferreira Andrade (PhD student, ecology specialist): data collection in the field (Ponta de Matos beach).

Marianna Barbosa da Silva (PhD in Zoology, tropical fish specialist): fieldwork planning, method orientation and data collection in the field (Jacumã beach).

Shaka Nóbrega Marinho Furtado (MSc in Zoology, ecology specialist): data analysis on CPCe.



Workshop lecturers on community-based tourism and boating certification

André Carlos Pereira Campos (Specialist in Maritime Navigation and local coordinator of PRONATEC - National Program of Access to Technical Education and Employment).

Adriano do Nascimento Felipe (Local guide at the APA da Barra do Rio Mamanguape – a protected area with sustainable use of natural resources).

12. Any other comments?

We would like to thank immensely the Rufford Foundation for providing us with this grant. Without it, we wouldn't be able to implement this sea turtle in-water monitoring community-based involving target fishing villages. We hope to ensure the continuity of this project with Thayse's master thesis and effectuating the sea turtle watching community-based ecotourism program with the continued support of Rufford Foundation.

I personally would like to mention how much this project has provided me with personal growth, in relation to the formation of knowledge multipliers, people management, and leadership development. The trust reinforced with local stakeholders and communities allows us to advance in conservation based on social, environmental and economic actions.

Moreover, since this report is dedicated to the evaluation of the project management, we have attached a technical report (Update: December 2018) to present map, chart, and photographs of project's results.