

## The Rufford Small Grants Foundation

### Final Report

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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**

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Grant Recipient Details	
<b>Your name</b>	Andres Lopez
<b>Project title</b>	Bull Shark Project: conserving the marine biodiversity of Guanacaste, Costa Rica.
<b>RSG reference</b>	12266-1
<b>Reporting period</b>	August 2012-August 2013
<b>Amount of grant</b>	£6000
<b>Your email address</b>	alopez@misiontiburon.org
<b>Date of this report</b>	September 15 <sup>th</sup> , 2013

**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
Describe the movements and habitat use of <i>C. leucas</i> in relation to environmental variables in possible critical habitats located inside and outside the Guanacaste Conservation Area.			X	<p>We carried out six tagging expeditions: two acoustic receivers in Guanacaste Conservation Area were collocated; and 10 acoustic transmitters on adult bull sharks and mantas were implanted, using a modified spear gun during scuba dives.</p> <p>The information recorded was downloaded three times. The data shows that some sharks have a high fidelity to the sites, visiting them for long period of times (weeks-months). During the last 3 months, the receivers have recorded more than 10.000 detections. The most of them was during the day (between 5 am and 5 pm, where the 99% of detections happens), sharks don't stay at the sites during the night. Due sharks feed at night; we have the conclusion that they use them as reproduction area and cleaning station.</p>
Determinate the occurrence and relative abundance of <i>C. leucas</i> in relation to environmental variables at Islas Murcielagos (Bat Islands), Guanacaste Conservation Area.			X	<p>We carried out 12 expeditions for visual counts. Also we have a workshop with dive shops and we have trained the dive guide for data collection. The sharks visit the Murcielagos Islands between May and September, the highest relative abundance was reported on July, where the average relative abundance was <math>7.5 \pm 2.5</math> sharks/hour and the average temperature was <math>28.5^{\circ} \pm 1.5</math> C.</p>
Estimate the economic value of <i>C. leucas</i> for the coastal community of Playa del Coco, located next to the Guanacaste Conservation Area.			X	<p>During the project we made questionnaires to the dive guides and instructors of Playas del Coco; also some interviews to local fishermen. So, we could estimate the value of a bull shark season for the Cocos Community. During this year, approximately 1000 divers have visited the Murcielagos Island to see the bull shark. According to our analysis the bull shark represent \$500,000 for the community. However,</p>

				the bull shark season will end in November, so we need to collect more data to get the complete information.
Involve the communities in the conservation and protection of <i>C. leucas</i> and marine biodiversity of Guanacaste, by means the implementation of an environmental education program			X	<p>We carried out two meetings with the dive shops, guides, dive instructors, and recreational divers. During these meetings we showed the results of the project, the most important conclusions and the future steps. We have involved more than 50 professional divers of seven different dive shops of Playas del Coco y surrounding communities (Deep Blue diving, Richcoast diving, Summersalt diving, Rocket Frog Diving, Ocotal Diving, Buzos de Aventura Dive Center, Divingsafaris). We have distributed the waterproof guide and data table for the collection of bull shark sightings at Murcielagos Islands.</p> <p>Also, we have carried out four educational activities at Playas del Coco, and surrounding communities, Playa Panamá and Cuajiniquil. During one activity we have a Festival with the "Ocean Parade".</p> <p>In the educational activities we involved more the 200 persons of the coastal communities.</p>

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

When we began the tagging we have some difficulty, because the scales of bull shark are more strong than the others sharks we use to tag. So, we need to modify the transmitter implementation, with a powerful band to the spear gun and a sharper tip. That was a problem because the short season has this specie at the Murcielagos Island (5-6 months).

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

The most important outcomes of the project are:

1. Identification of a reproduction area and cleaning station for bull sharks. They are considered critical habitat, since they are essential for the biological sustainability of the specie.
2. We raise awareness to the communities' students on the importance of bull shark conservation for the marine ecosystem and for the coastal communities of Guanacaste.

3. We promote the reduction of illegal fishery at Guanacaste Conservation Area. We supported the Conservation Area on the elaboration of denunciations again fishermen found inside the National Park.

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

We carried out different activities for the involvement of local communities (educational activities, festival, workshops and meeting). However the most successful one was the training of dive masters and instructors on data collection of bull sharks sightings. We also gave them the waterproof data table where the professional divers take data during the dives. In this way, the divers are directly involved on scientific data collection and they feel part of the project. Also, thanks to the project they understand the behavior and distribution of bull shark, so they can predict better and safer dives with the tourists.

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

Yes, I am. Actually, it is a long term project (at least 3 years) and it is very successful. It has reached very important scientific results, and at the same time, has attracted the attention not only of local communities, but also national media. For examples: <http://www.crhoy.com/realizan-marcaje-de-tiburones-toro-para-ayudar-a-su-conservacion/>; <http://www.crhoy.com/marcaje-de-tiburones-en-guanacaste-comienza-a-dar-resultados/>; <http://www.crhoy.com/presentaran-avances-al-sector-turismo-sobre-marcaje-de-tiburones-en-costas-guanacastecas/>

I would like to continue this work and expand the study area, in order to identify new critical habitats for the bull shark. In this way, we could improve its protection and its biological sustainability. This specie is very emblematic for coastal communities, because the dive activity is more important as economical resource.

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

As I mentioned, newspaper reports were made about the project; however, I would like to share these results with the scientific community. For the next month, I will present the results of the project at Second National Symposium of Chondrichthyes de Costa Rica. Also, the next year with more data I would like to elaborate a scientific paper. The preliminary data of the acoustic programme are very optimistic, more than 10,000 detections, is a very important site for the species. So, is necessary identify more critical habitats outside the Murcielagos Islands. Also, we are planning to make a meeting in December 2013, when the bull shark season will close. At this time, we would like to share the most important results of the project and how could be used to protect this emblematic species and its habitat.

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

The funds are used between September 2012 and August 2013. However, most of them are spent during the first months for the equipment and elaboration of educational and informative materials.

**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
Questionnaires and interviews to tourists, dive operator, dive guides, fishermen, etc.	500	300	200	We spend less funds on the local travel item.
Elaboration, design and printing of informative materials (T-shirt, stickers, brochures, posters handbooks and games)	1750	1950	200	The t-shirts elaboration was more expensive than expected.
Materials for public murals (paints, brushes and office materials)	750	750	0	
Workshops: refreshments and materials	1000	1000	0	
Field equipment	1000	1000	0	
Educational activities refreshment and materials	1000	1000	0	
<b>TOTAL</b>	<b>6000</b>	<b>6000</b>		

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

I feel is important to expand the project to others areas of Guanacaste, it is necessary include new areas and collocate new acoustic receivers, so we have a better knowledge about the coastal migrations of this specie and we could protect it better.

**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?**

Yes, we used the RSGF logo on t-shirts, posters, data tables and presentations during the educational activities and workshops.

