

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.

Thank you for your help.

Josh Cole

Grants Director

Grant Recipient Details

Your name	Ricardo Andrés Sarmiento Devia
Project title	Building regional knowledge of understudied sea-turtle populations: associated with the Humboldt Current
RSG reference	12424-1
Reporting period	November 2012-November 2013
Amount of grant	£6000
Your email address	sarmientoricardo20@yahoo.es; ricardo.sarmiento@uantof.cl
Date of this report	December 2 nd , 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
<p>Provide information on the spatial distribution of sea turtle species in Antofagasta Bay;</p>		X		<p>We made 13 visual surveys, starting from the fishing terminal in Antofagasta (6) or Bolsico sector in the border of Mejillones Península (7), taking routes of around 39.88(±13.17) km and 2.83(±2.34)h. Every time a group of at least 3 people, one equipped with optical tools, on board of an artisanal fishing boat were looking for sea turtles in the water surface. Despite this, we just had one sighting of a <i>Chelonia mydas</i> adult, off sewer treatment factory in Antofagasta Bay.</p> <p>Our methodology is often used on shallow areas, in tropical regions, where the visual conditions are easier to deal. From that point of view, other researchers would say that the low abundance we measure, it is not a well approach to establish the presence of sea turtles in Antofagasta Bay.</p> <p>However, the visual surveys were needed in order to have a systematic evidence that there is a reduction in abundance of sea turtles sightings in this area. Since that, we already made the legal procedures to deploy tangle nets specifically designed to address no lethal fishing on sea turtles, in specific sectors of this region where fishermen have reported their presence.</p> <p>On the other hand, from the local communities, we can report at least nine coastal sightings reports in Antofagasta and Mejillones Bays in the last year. These correspond to <i>Chelonia mydas</i>(6), <i>Lepidochelys olivacea</i>(1), and <i>Dermochelys coriacea</i> (2) adults. For <i>Chelonia mydas</i>, 2</p>

			<p>individuals were found beached, in Bolsico sector in the Mejillones Peninsula. The other cases are sightings made by fishermen or researchers working in the bays.</p>
<p>Establishing Relationship between sea turtle presence with the local oceanographic conditions</p>		X	<p>Right now we do not have enough information to say that sea turtle comes to Antofagasta bay when sea water inside the bay are warmer, because the past summer we made few surveys. We hope make several surveys the next summer. Despite this, our data point in this direction. The recent reports of sea turtles sightings in Antofagasta occur in sectors where there is warmer water. We are waiting for summer, to get new information regarding to this.</p> <p>On the other hand, some fishermen in the area have a well developed theory about green and kemp ridley sea turtles. They say that turtles come at the middle summer, when jellyfish come to this region, and enter to the bay just when jellyfish come into.</p> <p>In any case, this is a starting point to measure the relationship between the sea surface temperature inside the bays (Antofagasta and Mejillones) and the presence of sea turtle , and focus on the reasons for the their “reduction” in this area.</p>
<p>Get information about the individual diet of sea turtles in Antofagasta</p>	X		<p>Because the absentness of effective catches of sea turtles during the tracks surveys, we didn’t start with stable isotope analysis to make feeding approach of these species in Antofagasta. However, we developed a list of potential feeding items in this area, based on a review studies of the diet for both species and approaches to benthic communities structures in this region.</p> <p>In the next phase of this project, we pretend get tissue samples of both the</p>

			sea turtles, and their potential preys, to construct statistical models about their trophic level in this area, based on stable isotope values.
Establishing working relationships with the local fishing communities		X	<p>The fishermen communities in Chile face a critical situation owing to the scarcity of the resources; also, a new law, driven to re-distribute the quotas and protect the sea resources is coming effective, which suppose several changes in the way and mean of their work. Because of that, fishermen in Antofagasta are concerned about the health of the coastal ecosystems in this region, and about their future. Since that, several have contributed to our project by answering a survey about their interactions with sea turtles and other species during their tasks. Also, several have received an identification guide, which let them make a rigorous report of the sea turtle specimens they see. Ultimately, a couple of them in Antofagasta fishing port are part of the research group, providing their boat and giving their time to make the visual surveys every month.</p> <p>Also, University of Antofagasta counts with an agreement with a maritime dealership that provides boats and technicians that give the support for the surveys in Bolsico-Santa María Island sectors.</p>
Establishing a work group trained on sea turtle field research		X	<p>Now days, we count with at least 3 undergraduate students that have made part of the work group during the surveys. Also, professors and other researches in the University of Antofagasta, have taken part in the project by giving their time to accompany the surveys. In other hand, we did a course on Basic Aspects about Ecology and Techniques research of sea turtle, in the same <i>Facultad de Ciencias del Mar y Recursos Biológicos</i> at Universidad of</p>

			<p>Antofagasta. Lately, in the context of the Explora Programm (from Conycit), we did a conference for high school students about the sea turtles and our project, how they can contribute to preserve these species.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

- Well, the biggest disadvantage at the start of the project was accessing to money from England. Being a foreign student in Chile, you cannot have a checking account. So I chose to receive the grant funds through an account I had in Spain. However, to handle a large amount of money from here, I had to do a lot of paperwork and ultimately pay an extra fee. Then I realized that having a savings account, you can receive part of the money in your account, and the rest in cash, at the same bank. Obviously, no one explain that, and then you lose time learning how to deal with the system.
- I bought several of the equipment for the project in the U.S., some because they were cheaper, and others because they were not available in Chile. It is easy to think that the shipment will be more economical and simple through a friend, but there are always complications. In my case the shipping company in the U.S.. States made a mistake about the address, and I lost one month waiting for a friend to receive my package. So, I think it is best to pay a little more and get the packages directly to your home.
- Several times I had to postpone the date for visual transects. Sometimes the weather or sea state was too bad to go to ground. Other times, the boat or ground transportation experienced some last minute failure. In each case, we simply delay the work for a couple of weeks. The important thing was to stay calm and re schedule the plans.
- The most important practical objective of this project was to capture the turtles to take samples of blood and skin. However, the methodology used did not yield us good results. Although we had several reports of sightings of turtles in the area by fishermen and other researchers, we had no chance to catch them during our travels. Therefore, we processed the legal permissions to catch turtles using baited nets. Unfortunately these permissions took a long time to be processed in Chile. We waited nearly three months. Now that we have the permissions we must get the money for manufacturing the gillnet. As we get this gear, we can go to places where turtles have been, with greater probability of capture.

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

We point the sea turtles of this region in the spotlight, responding to a general absence of recent abundance estimations or groups monitoring these species in this locality. Although we didn't have enough data to publish an article about this species in Antofagasta, we send two abstracts to the

international symposium on Sea Turtle biology and Conservation. We had established working relationships with fishermen of Antofagasta, and get contact with sea turtle research and conservation groups in Chile, who are open to share info and enforces to development analysis about this species in this region. We start a work group, specialist in sea turtle research, with capacities to monitor and measure this species.

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

This project focused on two fishing associations: fishermen from Antofagasta Terminal Pesquero and the union of Fishermen of Constitution Caleta Mejillones Peninsula. With each group several visits were made, and attended some meetings, to share with them the aims of the project. We also apply surveys aimed to know their understanding about sea turtles and how they interact with fishermen during their fishing operations. Finally an identification guide was given to each one with a brief training, to indicate the key elements for recording specimens sighted during their tasks at open or neritic sea.

5. Are there any plans to continue this work?

Recently , we have applied to the first *Convocatoria para Semilleros de Investigación*, which is the most recent enforce from the University of Antofagasta to support raising research groups on subjects that are underdeveloped inside the University despite the potential they have as a source of knowledge. Also, we are planning to get agreements with other researching groups focus on cetaceans, with the goal of join techniques to measure and identify whales and dolphins species we see during our tracks. Even until now we have not got effective captures of sea turtles in Antofagasta, it's important to keep the surveys in this area in order to develop a systematic estimation about their abundance and temporal distribution. This later would be possible only having at least for several years, estimations based on the same tracks and technical conditions during the surveys.

Also this subject is getting interest between people inside and outside academic environment, as a potential source of job around ecotourism or biotechnological applications. Since that, keeping the surveys and the interaction with fishermen from this region is important for several groups and interest in Antofagasta.

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

Well, we already sent and abstract to the 34th Annual Symposium on Sea Turtle Biology and Conservation (<http://iconferences.seaturtle.org/>), for sharing our results with specialists from around the world on this subject. Also, once we have enough stable isotopes analysis from tissue sample from alive turtles and potential preys for them in this region, we will write a scientific article establishing the ecological role of the sea turtles for Mejillones Península.

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

As seen before, our project consists of surveys that we made every month (aprox.) in different coastal sections next to Mejillones Península. In beginning plans, we scheduled to make these surveys steadily from the past December to this month. But logistical and other issues made change the plans in several occasions. Because of that now we have two more pending surveys, and plans to include fishing labours using special tangle nets to catch the turtles, during summer. According to the artisanal fishermen, this is the season with more probabilities to see and catch turtles.

From that point of view, the RSG support the complete development of the project. However, it's important to say that at the beginning a substantial portion of the grant was spent buying the equipment. In the same framework, the participation of the project on international academic meetings depends on the access to new finance sources as project, and individually, as a graduate student.

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
Equipment	£2,492.00	£1,834.90	£657.10	We get the support of NOAA to get metal tags for sea turtles; We decided not to buy a Conductivity/Salinity/Temperature Meter and a GPS, because these equipments are already available in the other research groups in the University of Antofagasta, with who we share field enforcement and resources.
Office supplies	£578.00	£379.76	£198.24	We decided not to buy a printer, and save this money to print more identification guides or get other resources we need.
Field census	£3,555.00	£2,727.14	£827.86	We still have 2 surveys in December 2013.
Transferences	£0.00	£104.78	-£104.78	We don't expect to pay for transferences or tax by moving the grant funds from England.
TOTAL	£6,625.00	£5,046.58	£1,578.42	

Each value was estimated using the individual cost of the item in question multiplied by 0.00127 for conversion of Chilean pesos to sterling pounds.

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

- Training new students on sea turtle field research techniques
- Get agreements with other fishermen associations to get access to the reports about the turtles they have.
- Buy and get experience with the tangle nets to catch the turtles.

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?

The project was publicised by several local newspapers notes and web page notes in local media and in the web page of the University of Antofagasta:

- <http://www.comunicacionesua.cl/2013/09/06/las-tortugas-deben-ser-mas-protegidas-en-la-region/>

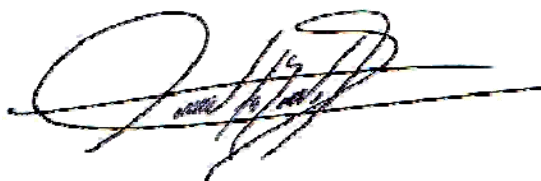
. Also, the sea turtle identification guide and survey of traditional knowledge include the RSGF Logo, as the power point presentations that we made inside and outside the university. On the other hand, the project title and a link to the Rufford Foundation web page was included in my profile as the web page of the Doctorado en Ciencias Aplicadas m/Sistemas Marinos Costeros:

<http://www.cienciasaplicadasmsmc.com/sitio/index.php/download/perfil-investigadores/estudiantes/110-ricardo-andres-sarmiento-devia>

11. Any other comments?

RSGF was an amazing source to support the start of this project. It gave us access to the equipment and tools we need to go out to field and reattribute the time and enforcement of fishermen in this area to help us. Also, it's wonderful that for us as new researchers because it let us drive the funds without limitations about the items they are assigned or the schedule in order to be expensed.

12. I agree to this report being published on the Rufford Small Grants website



Signed (or print name) Ricardo Andrés sarmiento Devia