

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. 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 Fonseca López
Project title	Ecology of female Eastern Pacific green turtle (<i>Chelonia mydas agassizzi</i>) and their nests at Naranjo Beach, Santa Rosa National Park, Costa Rica
RSG reference	9525-1
Reporting period	February 2010 – March 2011
Amount of grant	£5270
Your email address	luisfonsecalopez@gmail.com
Date of this report	March 26th 2012

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
Assess the number of female green turtles nesting in Naranjo Beach.			X	During two sampling seasons we tagged 62 nesting females, of which 80% were recaptured at least once. However, 15 of the tagged females were preyed by jaguars (<i>Panthera onca</i>) during the nesting process. This represents a strong impact on the green turtle population, accounting for 24% of all marked females.
Determine the nest success and the condition of embryonic development of eggs that do not hatch in nests of green turtles.			X	During the period of study, we tracked the performance of 102 nests. The overall hatching success was above 70%.
Study the predation of nests and hatchlings, as well as the destruction of nests due to high tide and beach erosion.			X	In the past we documented large nest predation by raccoons, coatis and coyotes. However, during the study period only five nests were predated by raccoons, representing a minimal portion of the total. No coyotes or coatis found on the beach, which can be advantageous for sea turtle nests, but it could be a disadvantage for the local ecosystems as the energy transfer from sea to land may have been disrupted. We do not know the causes but plan to continue monitoring the situation.
Develop, along with the Park Administration, an environmental educational program for the tourists,			X	To accomplish this goal we conducted daily talks to tourists to raise awareness and educate them on the biology of sea turtles. Also invited tourists to night patrols to observe the

students, volunteers and park rangers of the Santa Rosa National Park.				nesting process. During the evenings the tourists were involved in the release to the sea of hatchlings that were collected during nest exhumations. We also provided training to 25 park rangers on biology and conservation of sea turtles.
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

The biggest difficulty we had was in October 2012 due to heavy rains that occurred on the beach. The rivers flooded and it was not possible to leave the beach for food. However, national park rangers gave us food those days.

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

Starting a program of long-term monitoring of nests and female green turtles: this result is of great importance since it started simultaneously with Naranjo beach monitoring in Nancite beach (2 km north of Naranjo beach) and Cabuyal beach (4 km south of Naranjo beach). This will reveal with greater certainty the population status of this species in the north Pacific of Costa Rica. Also, tagging of females has helped us determine that females do not show a 100% fidelity to the nesting site, since we observed female exchanges between local beaches.

Monitoring of the other species of sea turtles: at the same time that we have monitored green turtles, we have studied female olive ridley (*Lepidochelys olivacea*) and leatherback (*Dermochelys coriaca*) nesting at Playa Naranjo. So far we have marked 293 female olive ridleys and 7 female leatherbacks. Monitoring the leatherback turtle is of great importance, because the eastern Pacific population is critically endangered.

Jaguar preying on sea turtles. After discovering turtles preyed by jaguars the night before, we placed camera traps that allowed us to study the feeding patterns of jaguars. Our attempt to use the pattern of spots on the body of the jaguars to distinguish individuals was partially successful. During the study period we identified three females and four males. Also, we determined that the jaguars preyed on 24% of female green turtles, which represents a significant impact on the population structure of the species.

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

Not applicable.

5. Are there any plans to continue this work?

The idea is to continue the monitoring programme in the long term. This is because female green turtles migrate out of the region and may return after a lapse of 3 to 4 years. This suggests that to have a more robust knowledge of the population status we should continue its monitoring for at least 4 years. This will reveal the survival rate after their migration to and from their feeding grounds.

The continuation of the monitoring programme will depend on the funds necessary to achieve our monitoring goals throughout the year. The contribution of Rufford Foundation, NOAA, Leatherback Trust and International Student Volunteer group has been vital to the development of the programme and hope we can maintain this support.

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

At this time the information generated by the monitoring programme has been submitted to the Ministry of Environment, Energy and Telecommunications of Costa Rica through the reports of each season. In addition, information on the predation of turtles by jaguars has been presented in the main news of Costa Rica (<http://www.teletica.com/noticia-detalle.php?id=86921&idp=1>). Also collaborated on a documentary about Big Cats in Nat Geo Wild (<http://video.nationalgeographic.com/video/nat-geo-wild/specials-2/big-cats/ngc-sea-turtle-snack/>).

For this year we plan to submit at least two papers to international peer-reviewed journals, such as "Chelonian Conservation and Biology" or "Endangered Species Research" on issues regarding the green turtle. In addition, during the next International Symposium on Sea Turtle Biology and Conservation to be held in Baltimore, USA in February of 2013 we plan to present the results of the two seasons of monitoring.

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

The monitoring programme began in November 2010 with financial support from Leatherback Trust to work for 3 months. Later, with the RSG approval of the proposed monitoring programme we continued our work until April 2011. The work stopped because at this time of the year turtle nesting had ended. Monitoring was restarted in August 2011 and continued until March 2012. For this period work was funded by International Student Volunteer and the rest of the RSG funds. Throughout the monitoring we have had some support from NOAA, which provided metal tags for the turtles.

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
Research Assistant	3000	3000	0	
Laptop	500	500	0	
Communication radios	100	100	0	
Supplies	220	220	0	
Food and cooking fuel	1450	1450	0	
Total	5270	5270	0	

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

The most important step to strengthen the monitoring programme is to achieve economic self-sufficiency. To this end we have established alliances with international volunteer agencies, where we may obtain labor for work and an income for the programme. It is also important to provide information to international scientific journals to demonstrate the relevance of our work with regard to the conservation of nesting green turtles. This will provide input and support for future funding proposals.

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 RSGF logo has been used in the two reports submitted to the Ministry of Environment, Energy and Telecommunications. In the future be used in the International Symposium on Sea Turtle Biology and Conservation. In addition, the RSGF mentioned in the acknowledgments of scientific articles are published in the future.