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	Javier Paul Oña Lema
Project title	Humpback whale habitat preference and occurrence of songs as an initiative for in situ conservation off the coast of Ecuador and to the Galapagos Islands
RSG reference	15104-2
Reporting period	2014-2015
Amount of grant	£ 6000
Your email address	ecujavier10@gmail.com
Date of this report	25/06/2015

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
Determine distribution, habitat preference and acoustic behavior of humpback whales on the breeding ground at north and central coast of Ecuador.			X	Twenty-two days of fieldwork were carried out from June to August 2014, using fibreglass (8.5 m) with a 75 hp outboard motor. The routes were organised to cover most of the area with depths until 200 m. Baseline data of spatial distribution, habitat preference and occurrence of song will be transferred to maps including information on shipping routes and fishing areas to facilitate the identification of key conservation habitats and management areas long-term.
Extend the study area from the mainland coast to the Galapagos Marine Reserve.			X	Two days of acoustic monitoring were performed in deep water beyond 200 m. Information of surface activity and social groups of humpback whales were registered during visible hours. Eleven acoustic stations with an effort every 2-3 hours (standard interval) were performed in the night off coast of Esmeraldas. Further, 20 days were used to extend areas along the central coast and 5 days at Galapagos and the continental coast. Acoustic sampling stations covered most of the study area and the regional surveys covered pelagic and deep waters > 1000 m from continental coast to the Galapagos Marine Reserve.
Promote the environmental educational participation of local community (children, teens and fishermen) towards raise			X	Environmental education activities were carried out during our fieldwork. Local community such as kids, teens and adult collaborated and were keys to the educational workshops and playful activity on the scientific sailboat

their awareness of marine and cetacean conservation issues on the oceans.				"Frangipani"

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

Environmental conditions were extreme during our routes over offshore and deep waters. So, acoustic monitoring was limited among Galapagos and the mainland coast. However, visual sightings were worked at maximum during morning and evening. That helped to considered real presence and absence of humpback whales and other cetacean species**.**

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

Humpback whales were spatially distributed in clusters towards south-west of the study area (Bajos de Atacames, Esmeraldas). Further, some spatial clusters of humpback were observed along the Ecuadorian coast. The whales with a surface behaviour (jumping, slapping, etc.) showed a preference for soft substrates and shallow waters less than 50 m. statistically still our data are being analysed to identify possible changes on social group's preferences and spatial distribution during the 2012 and 2014 breeding season.

Fieldwork was conducted from the mainland coast towards the Galapagos Marine Reserve. Our scientific cruise took place in the breeding season of the humpback whales. Here the most of the sightings were of humpback whales along the coast, while among Galapagos Marine Reserve low sightings and occurrence of humpback whales song was evidenced. Habitat preference and spatial distribution still are analysed to identify and understand high places of occurrence in relation of depth temperature and substrate composition.

A small workshop was conducted for local kids of the same community. Here, we used our acoustic material and data on the behavior whales of the same year. That allowed to encourage kids and explained why whales, dolphins and all marine species are important on the ocean. Further we conducted an excursion board towards our sailboat "Frangipani". Here, the Captain interacted with children and did a playful demonstration, the functions of the sailboat, security issues and scientific fieldwork.

Local schoolchildren and fishermen participated actively during our visual and acoustic monitoring. We integrated local assistants over 18 years for taking of acoustic data, photo-ID, and skin sampling. Everyone had the opportunity to use acoustic devices, and support our scientific activities.

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

The local community especially kids benefitted from workshops about humpback whales and they visited our scientific sailboat as it anchored off Esmeraldas for a week. Further, some children and fishermen supported our scientific activities. Here, they learned about research methods and use of scientific devices to survey humpback whales during their migration. The scientific team socialised the goals and importance of the project CETACEA Ecuador in the Ecuadorian waters**.**

5. Are there any plans to continue this work?

Yes, definitely I will continue with this awesome project. Now, my goal is to obtain more funds to start my PhD program and extend the monitoring project of humpback whales and other cetaceans. Further, I want to manage a programme to study marine mammals (with topics of bioacoustics) on the scientific station "CETACEA CAIMITO" located in the Galera San Francisco Marine Reserve in the south of Esmeraldas.

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

We share our results at workshops and conferences at national and international events. Further, we have socialised our preliminary results and scientific news of the fieldwork through of page web and Facebook during this year (see www.cetaceaecuador.com). We are preparing posters with relevant information for the local community and our partners.

I submitted an article to the journal Marine Mammal Science about "Southeastern Pacific humpback whales (*Megaptera novaeangliae)* and their breeding grounds: distribution and habitat preference of singers and social groups off the coast of Ecuador."

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

The Rufford Grant was used for the field season in 2014 and during the first months of 2015 (part of activities and material education and publicity).

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.

Calculated on a rate of exchange of 1.64 US dollars for each British Sterling Pound. US dollars is the current currency in Ecuador.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Hydrophone array (changed for hydrophone omnidirectional)	900	300	+600	The rest of budgeted amount was included on boat rent and fuel (fibreglass and sailboat). Because we not received other complement fund for extending our fieldwork days.
Field Computer	250	320	-70	Difference due to local taxes for imported equipment. That was provided by an own personal fund.
Boat rent and fuel (June until August, 22 days fieldwork, Esmeraldas) and expenses of logistic navigation on sailboat (27 days fieldwork, from Galapagos island towards continental coast and survey along of offshore waters towards Esmeraldas).	3000	4000	-1000	Difference due to complement to rent a sailboat to extend the study area along the coast and Galapagos Island. Difference of £ 600 was included into the £ 4000 as actual amount of this expense.
Projector	150	200	-50	Difference due to local taxes for equipment imported. That was provided for an own personal fund.
Lodging Lodging: rental of hut per month £186 for 4 months = £744	500	744	- 244	Difference was provided by El Acantilado beach hotel.
Food £ 6 per person per day for 40 days = £ 240 X 2 people (investigator and assistant)= £480	400	480	-80	Difference was provided by El Acantilado beach hotel.
Transport (regional and local)	100	100	0	
Workshop with kids (£ 150), educational digital text (£ 200)	600	850	-250	This expense was covered the logistic issues to the workshop and a part was used to an

and publicity material (t-shirts £10 x 50= £ 500).				educational digital text, which will be finished to this year. Further, publicity material (t-shirts) was made to socialize the project in this year.
Office tools and field Material (Internet services, imprint of documents (text scientific). Templates for data collection, rechargeable batteries, and waterproof case to photographic camera, recorder device and hydrophone.	100	150	-50	Difference was provided for an own personal fund.
Total	6000	7144	-1144	

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

It is important to continue a visual and acoustic monitoring programme of cetaceans in Ecuadorian waters. Little is known about the status conservation and ecology of humpback whales (as other species) along the continental coast and insular region in Ecuador. So, the CETACEA project will start a programme of national and international volunteers to support our scientific activities. We will strengthen education activities, which are important to interact with local community as fishermen, kids and teens. During stay in the study area, our volunteers and scientific team will continue with small workshops and playful activities for kids and adults.

It is also important to link conservation efforts with other projects in the region. We are planning a regional workshop about humpback whale song " Coding the Art of Song at Pacific Southeast" imparted by Dr Garland. She is an expert in marine mammal bioacoustics, animal culture, social learning, vocal communication and behavioural ecology. We will invite researchers from Peru, Ecuador, Colombia, and Panama. The workshop goal will increase the knowledge and research on bioacoustic behaviour, and the impact of anthropogenic noise sources within the region. Future impacts of increasing noise pollution can then be assessed against this 'baseline' data. Encouraging and supporting researchers at this early stage in the emergence of bioacoustics in South America is essential for the production of high quality research, and robust conservation outcomes.

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

Yes, we did. We always mentioned the Rufford Foundation during our fieldwork and the logo on all presentations of CETACEA project toward people during the season 2014. Further, we participated to the Rufford Small Grant Conference, Chile. We presented our outcomes from 2012 and advances of 2014. The support of our project by Rufford Foundation has been published on our web page and facebook. Also, the logo was attached on posters at conferences and publicity material of the project.

11. Any other comments?

Again, I am very grateful for the opportunity to work in the monitoring of humpback whales, thanks to the support of Rufford Foundation. This grant was fundamental to extend our understanding about distribution and habitat preference of humpback whales along the coast, and at specific breeding grounds in northern Ecuador and the Galapagos Islands